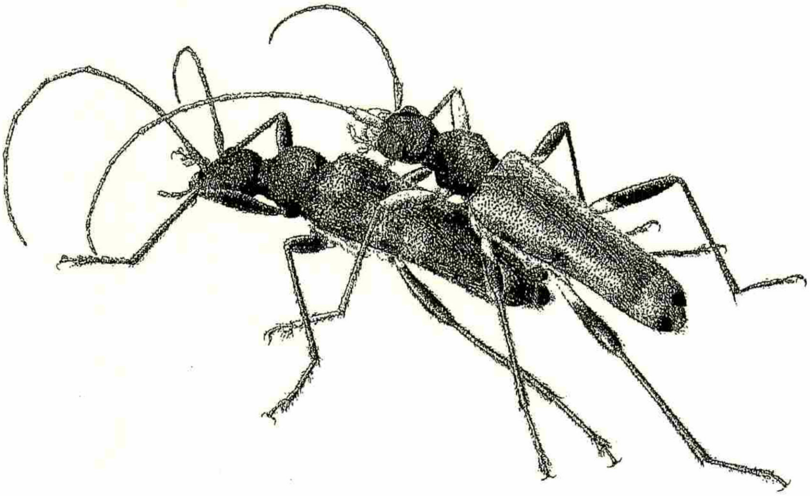
ISSN 0286-9810

Vol. 60, No. 2 October 31, 2005

昆蟲學評論

THE ENTOMOLOGICAL REVIEW OF JAPAN



日本甲蟲學會

THE JAPAN COLEOPTEROLOGICAL SOCIETY
OSAKA

The Japan Coleopterological Society

(Founded in 1945)

President: Hiroyuki SASAJI

Managing Directors: Yasuhiko HAYASHI, Hideyo NOMURA, Tateo ITO, Kozo MIZUNO, Noboru ITO, Motohiko TANIKADO, Shigehiko SHIYAKE, Hideto HOSHINA, Masataka SATÔ , Kimio MASUMOTO

Editorial Board: Katsura MORIMOTO (Chairman), Hiroyuki SASAJI, Yasuhiko HAYASHI, Nobuo OHBAYASHI, Masahiro SAKAI, Kiyoshi ANDO, Noboru ITO, Hisashi ASHIDA, Masahiro ÔHARA, Ayumi YOSHIKAWA

Consulting Editors: Shun-Ichi UÉNO, Tikao OHKAWA, Sadanari HISAMATSU, Shinsaku KIMOTO, Kôhei SAWADA, Takashi KISHII

会　長　佐々治寛之
運営委員　林　靖彦，野村英世，伊藤建夫，水野弘造，伊藤　昇，
谷角素彦，初宿成彦，保科英人，佐藤正孝，益本仁雄
編集委員　森本　桂（委員長），佐々治寛之，林　靖彦，大林延夫，酒井雅博，
安藤清志，伊藤　昇，芦田　久，大原昌宏，吉川鮎美
評 議 員　上野俊一，大川親雄，久松定成，木元新作，澤田高平，岸井　尚

The Entomological Review of Japan (ISSN 0286-9810) is published biannually on April and October, by the Japan Coleopterological Society. Annual subscription is ¥ 5,000 for individual members. We are willing to exchange with any publications on entomology.

Business Office
The Japan Coleopterological Society
c/o Entomological Labolatory
Osaka Museum of Natural History
Nagai Park 1–23, Higashisumiyoshi-ku
Osaka, 546–0034 JAPAN
URL – http://www.mus-nh.city.osaka.jp/jcs.html

Printed by
NPC Corporation, Osaka, Japan

Ent. Rev. Japan, **60** (2): 101–136, October 31, 2005

Revision of Palearctic Species of *Veraphis* CASEY (Coleoptera: Scydmaenidae)

Paweł JAŁOSZYŃSKI

Os. Wichrowe Wzgórze 22/13, 61–678 Poznań, Poland

and

Hideto HOSHINA

Department of Regional Environment, Faculty of Education and Regional Studies,
Fukui University, Fukui City, 910–8507 Japan

Abstract Palearctic species of the genus *Veraphis* CASEY are revised and divided into three groups (*japonicus*, *sawadai* and *irkutensis* groups); two species are treated separately (*V. engelmarki* FRANZ and *E. ishikawai* HISAMATSU). The following taxa are redescribed or described as new: i) *japonicus* group: *V. japonicus* (K. SAWADA) comb. nov. for *Eutheia japonica* K. SAWADA (Japan), *V. hisamatsui* sp. nov. (Japan), *V. odaigaharensis* sp. nov. (Japan), *V. tottoriensis* sp. nov. (Japan); ii) *sawadai* group: *V. sawadai* sp. nov. (Japan), *V. kurbatovi* sp. nov. (Japan); iii) *irkutensis* group: *V. irkutensis* (REITTER) (Siberia and Mongolia), *V. horianus* sp. nov. (Japan); iv) species not included into any group: *V. engelmarki engelmarki* FRANZ (Sweden and Finland), *V. engelmarki fatiloquus* KURBATOV, a new status for *V. fatiloquus* KURBATOV (Russian Far East), *V. engelmarki niponensis* subsp. nov. (Japan), *V. engelmarki koreanus* subsp. nov. (North Korea), and *V. ishikawai* HISAMATSU (Japan).

Key words: Coleoptera, Scydmaenidae; Eutheiini; *Veraphis* CASEY, taxonomy, Palearctic, new species, revision.

Introduction

The scydmaenid beetle genus *Veraphis* CASEY belongs to the tribe Eutheiini, and so far includes twelve species distributed in Holarctic Region (NEWTON and FRANZ, 1998). Only four species have been described from Palearctic Region. *Veraphis engelmarki* is the only species of the genus known from Europe. It was described from the northern part of Sweden (FRANZ, 1970), and later found in further localities in this country, and in Finland (LUNDBERG, 1972, 1974, 1975, 1988, 1989, 1994, 2001; PETTERSSON, 1992; PETTERSSON and LUNDBERG, 1993). Siberian *Eutheia irkutensis* REITTER (conspecific to *E. euplecticornis* REITTER, known from Siberia and northern part of Mongolia) was transferred by FRANZ (1970) to *Veraphis*. Later, *V. ishikawai* HISAMATSU (1985) was described from Japan, and very recently KURBATOV (1995) described *V. fatiloquus* from the Russian Far East.

Diagnostic characters of *Veraphis* have been recently discussed (JAŁOSZYŃSKI, 2003). Structures on the vertex and the aedeagus have been proposed as key characters to discriminate between closely related genera *Veraphis* and *Eutheia*. In *Veraphis*, the vertex always bears a pair of pits or longitudinal grooves, and the aedeagus is elongate, nearly tubular, with very long basal part and variously delimited short apical part; it also bears an oval hymenous area on the dorsal wall of the median lobe. In *Eutheia*, the vertex most often is smooth, with neither pits nor grooves, the aedeagus has a voluminous, bulbous basal part, lacking the membranous area on its dorsal wall, and well delimited large apical part, often distinctly flattened dorso-ventrally. The excavated antennomere XI, traditionally treated as a diagnostic character of *Veraphis*, appeared to have a minor importance. It can be found in some species of *Eutheia* (JAŁOSZYŃSKI, 2004) and does not occur in some species of *Veraphis*, as described in further parts of the paper; the metasternal carina is also not unique for *Veraphis* and has been found in *Eutheia* (JAŁOSZYŃSKI, 2003).

Examination of all species of the Japanese Eutheiini undertaken during the present study revealed that *Eutheia japonica* K. SAWADA in fact belongs to *Veraphis*. Several undescribed species were found in various collections; they are described below as *V. sawadai* sp. nov., *V. hisamatsui* sp. nov., *V. odaigaharensis* sp. nov., *V. horianus* sp. nov,. *V. tottoriensis* sp. nov. and *V. kurbatovi* sp. nov. Some individuals from the Far East were found to be extremely similar to Scandinavian specimens of *V. engelmarki*; their aedeagi show a very high degree of similarity, also male dimorphic sexual characters are the same. *Veraphis fatiloquus* belongs to this group of taxa, being the most similar to the type specimens of *V. engelmarki*. Therefore, the latter species is herein divided into *V. engelmarki engelmarki* inhabiting Scandinavia, *V. e. fatiloquus* from Primorie, Russia, *V. e. koreanus* subsp. nov. from Korea, and *V. e. niponensis* subsp. nov. from Hokkaido, Japan.

All the Palearctic species of *Veraphis* treated in the present paper are revised on the basis of the type materials. The measurements are as follows: the length of the head is from the occipital constriction to the anterior margin of clypeus; the width maximum including eyes; the length of pronotum measured along midline; the length of elytra measured along the suture; the width of elytra combined, maximum; the elytral index (EI) is length/maximum width. The total body length is the sum of individual measurements of the head, pronotum, elytra and the exposed part of abdominal tergites. The materials used for the study are deposited in Ehime University, Ehime, Japan (EU), Fukui University, Fukui, Japan (FU), Hungarian Natural History Museum, Budapest, Hungary (HNHM), Naturhistorisches Museum Wien, Austria (NMW), National Science Museum, Tokyo, Japan (NSMT), private collection of Paweł JAŁOSZYŃSKI, Poznań, Poland (PCPJ), private collection of Serguei KURBATOV, Moscow, Russia (PCSK), and private collection of Kôhei SAWADA, Osaka, Japan (PCKS).

Taxonomy

Genus ***Veraphis*** CASEY

[Japanese name: Hirata-kokemushi Zoku]

Veraphis CASEY, 1897: 509. Type species: *Eutheia impressa* LECONTE, 1897 (des. FRANZ in NEWTON and FRANZ, 1998).

The genus *Veraphis* has been defined by the last antennomere with a broad excavation, vertex with two distinct pits, pronotum with transverse basal groove, and mesosternum with low but distinct carina. As discussed previously, some of these characters can be found also in *Eutheia*, the genus which is very similar to *Veraphis* (JAŁOSZYŃSKI, 2003, 2004). Therefore, the diagnosis of the genus must be modified. The following combination of characters can be used to distinguish *Veraphis* from all other members of the Eutheiini: body elongate and flat; maxillary palpomere III large, 2–3 times as long as wide; palpomere IV well developed, subconical, as long as wide at base or slightly shorter; vertex with a pair of pits or grooves; pronotum with a pair of shallow lateral ante-basal pits or impressions and transverse, often indistinct and slightly diffused ante-basal groove; each elytron with single basal fovea filled with very short and dense setae; apices of elytra truncate; pygidium and often propygidium exposed, subhorizontal; procoxae contiguous, mesocoxae moderately widely separated; metacoxae very broadly separated; protibia in males often with subapical lobe; metasternum in both sexes or only in males often with median groove or impression; aedeagus elongate, nearly tubular, with symmetrical, slender parameres bearing apical setae, median lobe divided (often indistinctly) into long basal part with oval hymenous area on its dorsal wall and short apical part, sometimes with apical setae.

Palearctic species can be divided into three distinct groups; the division is based mostly on male sexual dimorphic characters: i) *japonicus* group comprising *V. japonicus*, *V. hisamatsui*, *V. odaigaharensis* and *V. tottoriensis*; ii) *irkutensis* group with *V. irkutensis* and *V. horianus*; and iii) *sawadai* group with *V. sawadai* and *V. kurbatovi*. Two species cannot be placed in any groups: *V. engelmarki* represents a separate taxon distinctly different from all species groups, and *V. ishikawai* is known from females only, so its group diagnostic characters remain unknown (however, it may be close to *V. engelmarki* or the *irkutensis* group). Several Palearctic (especially Japanese) species of *Veraphis* can be certainly identified only on the basis of the aedeagus. Females of some species can be identified only when collected together with males.

Key to species groups of *Veraphis* of the Palearctic Region

1. Body length about 1.8 mm. .... *V. ishikawai* HISAMATSU
— Body length below 1.6 mm. 2
2. Protibia of males without subapical lobe on ventral sufrace. .... *irkutensis* group
— Ventral surface of protibia of males with triangular subapical lobe. 3
3. Protrochanter of males with expanded postero-distal margin forming distinct angle; aedeagus with apical setae. .... *V. engelmarki* FRANZ
— Protrochanter of males with rounded postero-distal margin, without angle; aedeagus without setae. 4

4. Apex of aedeagus in dorso-ventral view emarginate or with distinct median notch. .... *sawadai* group
— Apex of aedeagus in dorso-ventral view subtrapezoidal or rounded, without notch or emargination. .... *japonicus* group

Species group *japonicus*

Antennae with well separated, 3-segmented club, showing no sexual dimorphism. Males with non-modified protrochanters; protibiae with subapical lobe; metasternum with median impression, without median carina; and aedeagus without apical setae, with apex subtrapezoidal or rounded in dorso-ventral view.

This group comprises only Japanese taxa: *V. japonicus* (K. SAWADA), *V. hisamatsui* sp. nov., *V. odaigaharensis* sp. nov. and *V. tottoriensis* sp. nov.

Key to species of the *japonicus* group

1. Head anterior to eyes nearly triangular. .... *V. tottoriensis* sp. nov.
— Head anterior to eyes subtrapezoidal. 2
2. Pronotum with distinct, well visible punctation. Hokkaido. .... *V. hisamatsui* sp. nov.
— Pronotum with very fine and sparse, barely noticeable punctation. Honshû and Kyushû. 3
3. Elytral index: males 1.44–1.5, females 1.44–1.48. .... *V. odaigaharensis* sp. nov.
— Elytral index: males 1.30–1.37, females 1.24–1.33. .... *V. japonicus* (K. SAWADA)

Veraphis japonicus (K. SAWADA) **comb. nov.**

[Japanese name: Hoso-hirata-kokemushi]

(Figs. 1A–D, 2A, G, 3A, 4A–F)

Euthia japonica K. SAWADA, 1962: 20, figs. 6–7; FRANZ, 1976: 58; O'KEEFE and LI, 1998: 157.

Diagnosis. This species can be distinguished from other members of the group by very small and usually light brown body, indistinct pronotal punctation, subtrapezoidal anterior part of head and unique aedeagus.

Redescription. Body uniformly light brown; setation short, yellowish.

Male. Body length 1.24–1.38 mm (mean 1.27 mm). Head (Fig. 2A) widest at eyes, length 0.15–0.16 mm (mean 0.15 mm), width 0.24 mm. Vertex convex on sides and flattened in middle, with pair of relatively narrow, sharply marked grooves; frons moderately steeply lowering toward clypeus, slightly convex; supraantennal tubercles indistinct but recognizable. Punctation fine and sparse; setation sparse, relatively short, suberect to erect. Antennae (Fig. 2G) 0.47–0.5 mm (mean 0.48 mm) in length, with well separated, loose club composed of antennomeres IX–XI, narrow conical apical part of antennomeres IX–X delimited from broad subcylindrical basal part by uneven edges, antennomere XI not excavated, with uneven surface of apical part.

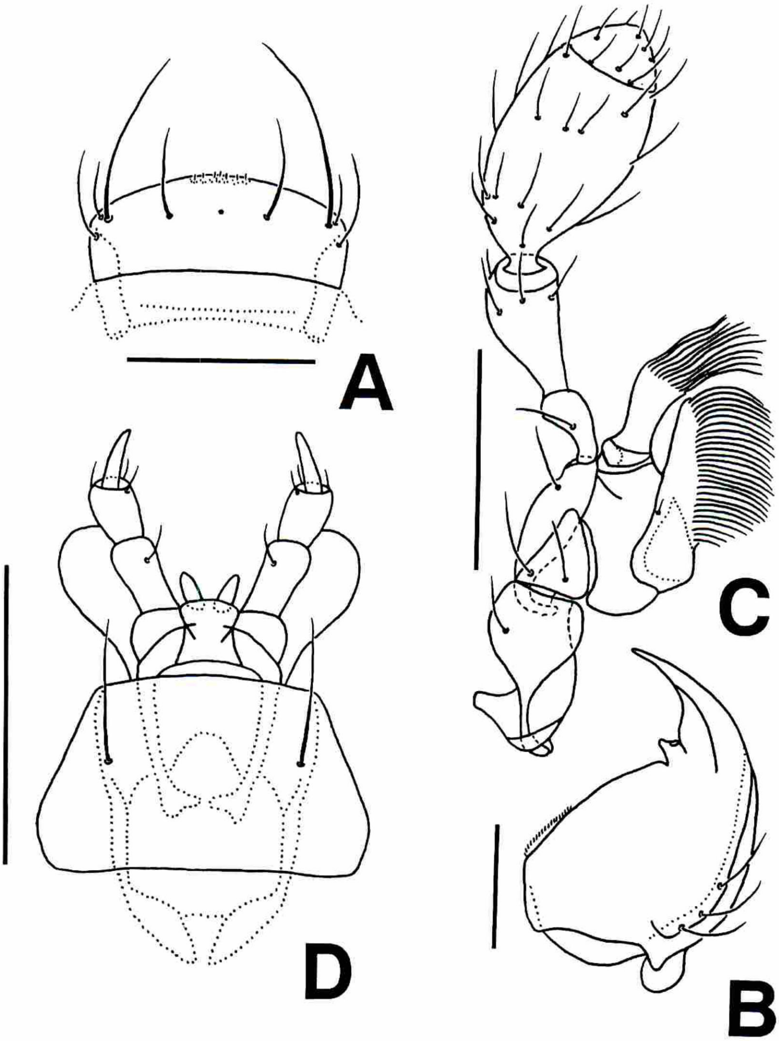


Fig. 1. *Veraphis japonicus* (K. SAWADA); labrum in dorsal view (A), right mandible in dorsal view (B), right maxilla in ventral view (C), and labium in ventral view (D). Scale: 0.05 mm.

Mouthparts (Figs. 1A–D). Labrum (Fig. 1A) nearly 3 times as wide as long, with rounded anterior margin; dorsal surface with four pairs of symmetrically distributed setae of various lengths and several very short setae along median part of anterior margin. Mandibles (Fig. 1B) nearly planar, subtriangular, with broad base, strongly curved, slender and sharp apical tooth and small subapical tooth; prostheca rudimental, with row of very short setae along basal part of internal margin; external margin near base with three long setae. Maxillae (Fig. 1C) with subtriangular stipes bearing two long setae near base; elongate palpifer with single long subapical seta; elongate lacinia divided into broad basal part and elongate distal part bearing dense row of setae along internal margin; and elongate, relatively slender galea with row of long and dense setae along apical margin; maxillary palpi relatively short, palpomere I elongate, thickening toward rounded apex, with single long seta; palpomere II similar in shape to I but about twice as long, with several long setae near apex; palpomere III large, about 1.5 times as long as II and twice as broad, with rounded sides, widest near middle, covered with sparse long setae; palpomere IV subconical, rounded, distinctly shorter than wide at base, with sparse setae. Labium (Fig. 1D) with large, subtrapezoidal mentum bearing a pair of long setae; hypostom well developed, broad; labial palpi with subcylindrical palpomere I slightly more than twice as long as broad, with single short seta; palpomere II subcylindrical, about 1.5 times as long as broad, with three setae near apical margin; palpomere III slender, about 5 times as long as broad at base, gradually narrowing from base to apex, asetose.

Pronotum as broad as long, widest near anterior third, length 0.3–0.4 mm (mean 0.32 mm), maximum width 0.3–0.4 mm (mean 0.35 mm), width at base 0.3–0.32 mm (mean 0.32 mm). Anterior margin only slightly rounded in middle; lateral margins slightly rounded, distinctly narrowing from widest site to obtuse hind angles; base in middle slightly expanded toward scutellum, expanded part delimited from disc by shallow transverse groove; lateral ante-basal pits elongate and relatively deep, connected by shallow transverse groove. Punctation fine and sparse; setation sparse, relatively short, suberect, sides of pronotum with two pairs of long, erect setae: one pair slightly behind widest site, the other pair close to lateral ante-basal pits.

Elytra elongate, moderately flat, widest slightly anterior to middle, length 0.64–0.67 mm (mean 0.65 mm), width 0.49 mm, EI 1.3–1.37. Internal basal fovea on each elytron relatively shallow, located in shallow, broad impression, closer to scutellum than to humerus; narrow adscutellar area raised and delimited from remaining part of elytra by sharp edge; apices of elytra truncate. Punctation sparse, composed of relatively large, but very shallow and diffused punctures; setation moderately long and sparse, suberect. Hind wings entirely reduced. Scutellum subtriangular, with rounded and raised apex.

Pygidium nearly as long as wide at base, apex rounded, punctation and setation as on elytra.

Metasternum with very shallow, hardly visible median impression disappearing just before posterior margin.

Fore tibiae (Fig. 3A) with small subapical lobe, remaining parts of legs not modified.

Aedeagus (Figs. 4A–F) 0.3 mm in length, moderately slender, in dorso-ventral view slightly constricted in basal third, widest at apical third, with large, oval area in basal half of dorsal wall, apex subtrapezoidal, rounded, in lateral view aedeagus minimally curved, with apical part separated by deep subapical emargination in dorsal wall, each paramere with three very short apical setae. Aedeagus slightly variable in shape among studied specimens, apical part of median lobe is very prone to distortions, it shows some degree of asymmetry in some males (Figs. 4D–F), which may be an artifact of preparation.

Female wingless, differs from male in having very indistinct median impression on metasternum, confined to anterior 1/4–1/3, and fore tibiae without subapical lobe. Antennae not modified, indistinguishable from those of male. Body length 1.16–1.2 mm (mean 1.19 mm), length of head 0.15–0.16 mm (mean 0.15 mm), width of head 0.22–0.24 mm (mean 0.24 mm), length of antennae 0.42–0.45 mm (mean 0.44 mm), length of pronotum 0.29–0.3 mm (mean 0.3 mm), maximum width of pronotum 0.31 mm, width of pronotum at base 0.29–0.3 mm (mean 0.3 mm), length of elytra 0.6–0.62 mm (mean 0.62 mm), width of elytra 0.45–0.5 mm (mean 0.48 mm), EI 1.24–1.33.

Distribution. Japan, SW and C Honshû: Ishikawa, Kyoto, Fukui and Gifu Prefs.; Shikoku:

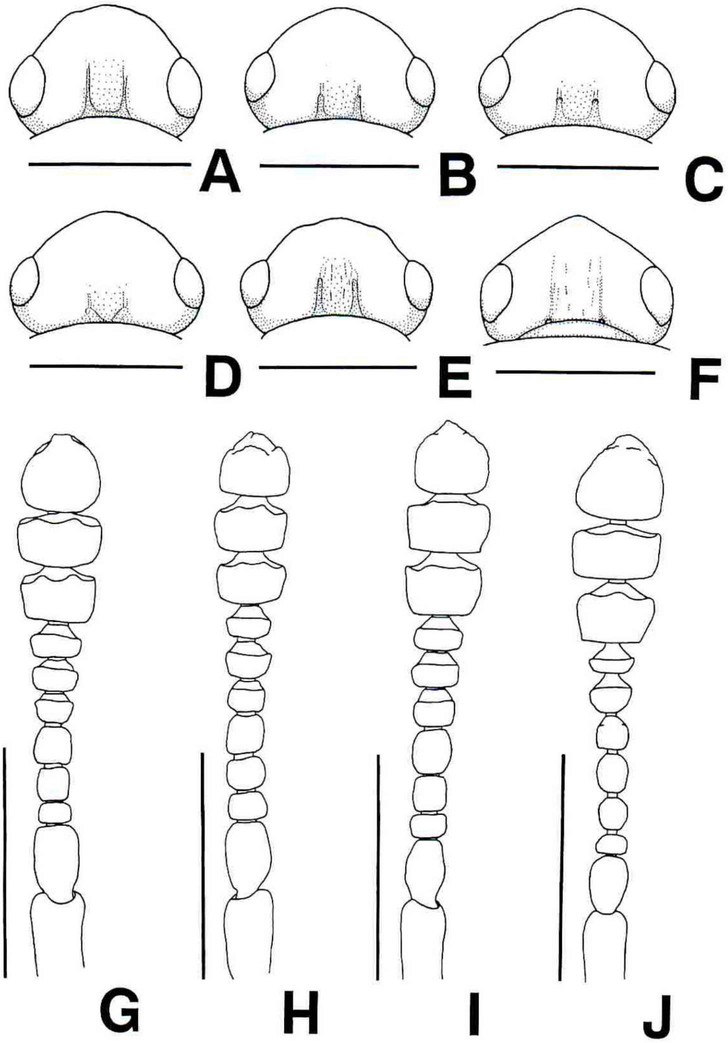


Fig. 2. *Veraphis japonicus* (K. SAWADA) (A, G), *V. hisamatsui* sp. nov. (B–D, H), *V. odaigaharensis* sp. nov. (E, I), and *V. tottoriensis* sp. nov. (F, J); schematic outline of head in dorsal view (males: A–C, E–F; female: D), right antenna of male in dorsal view (G–J). Scale: 0.2 mm.

Ehime Pref.

Materials examined. Holotype: ♀, red label with handwritten in black "HOLOTYPE", white label with printed "Kifune-Soryo, Pref. Kyoto, 10. VI. 1958" (day, month and the last digit of the year handwritten in black), white label with handwritten in faded black or blue "*Euthia japonica* SAWADA" and printed "Det. K. SAWADA, 1962" (last two digits handwritten) (PCKS). Additional materials examined: 5♂♂, 46♀♀, Sarukabe-Entei, Hakusan Mts., Ishikawa Pref., Honshû, ca. 950 m, 1–18. X. 2002, collected by pitfall traps, H. HOSHINA leg. (PCPJ and FU); 6♀♀, same data except for 14–25. IX. 2002; 12♀♀, same data except for 25–30. IX. 2002; 1♂, Hirayu Spa, Gifu Pref., Honshû, 24. VIII. 1987, S. NOMURA leg. (NSMT);

2♂♂, Mt. Toritate, Katsuyama City, Fukui Pref., Honshû, 30. V. 2002, H. HOSHINA leg. (FU); 1♂, Mt. Saragamine, Ehime Pref., Shikoku, 13. VI. 1997, H. HOSHINA leg (FU).

Remarks. Many individuals have been collected in Hakusan Mts. by small pitfall traps; to our knowledge this is the most abundant materials of the Eutheiini ever collected by this method. It is noteworthy that males in that sample were highly outnumbered by females, which may suggest some differences in biology between sexes.

Veraphis hisamatsui sp. nov.

[Japanese name: Ezo-hirata-kokemushi]

(Figs. 2B–D, H, 3B, 6A–C)

Diagnosis. This species has characteristic, distinct punctation on pronotum, in contrast to barely noticeable, very fine punctures in other members of the group.

Description. Body slender and flat, reddish-brown, with slightly darker narrow adsutural area on elytra, setation relatively long, yellowish.

Male. Body length 1.27–1.37 mm (mean 1.32 mm). Head (Figs. 2B, C) widest at eyes, length 0.15–0.16 mm (mean 0.15 mm), width 0.24–0.25 mm (mean 0.24 mm). Vertex with convex sides, between grooves flat, grooves variable in shape, always relatively short, moderately broad, shallow and parallel, in one male anterior part of each groove with indistinct pit (Fig. 2C). Frons with nearly flat and horizontal posterior part, and shorter anterior part steeply lowering toward clypeus; supraantennal tubercles indistinct. Punctation sparse and fine, slightly more distinct between supraantennal tubercles and eyes; setation sparse, moderately long, suberect to erect. Antennae (Fig. 2H) 0.46–0.5 mm (mean 0.49 mm) in length, with well separated, loose club composed of antennomeres IX–XI, narrow conical apical part of antennomeres IX–X delimited from broad subcylindrical basal part by uneven edge, antennomere XI not excavated, with uneven surface.

Pronotum as broad as long, widest near anterior third, length 0.29–0.32 mm (mean 0.31 mm), maximum width 0.3–0.34 mm (mean 0.32 mm), width at base 0.29–0.3 mm (mean 0.29 mm). Anterior margin only slightly rounded in middle; lateral margins minimally rounded, distinctly narrowing from widest site to obtuse hind angles; base in middle slightly expanded toward scutellum, expanded part delimited

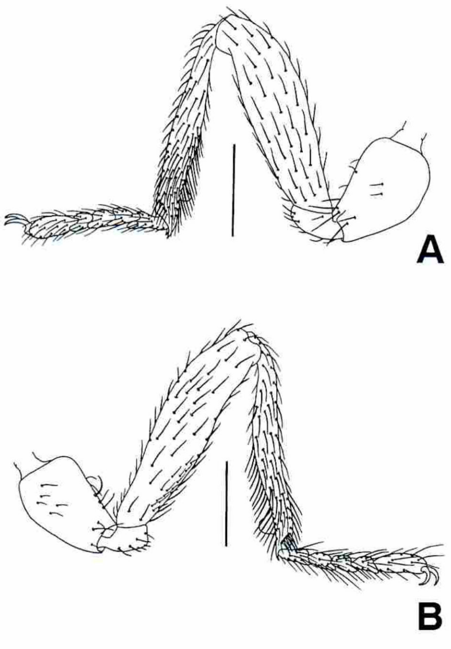


Fig. 3. *Veraphis japonicus* (K. SAWADA) (A) and *V. hisamatsui* sp. nov. (B); right (A) and left (B) fore leg of male in ventral view. Scale: 0.1 mm.

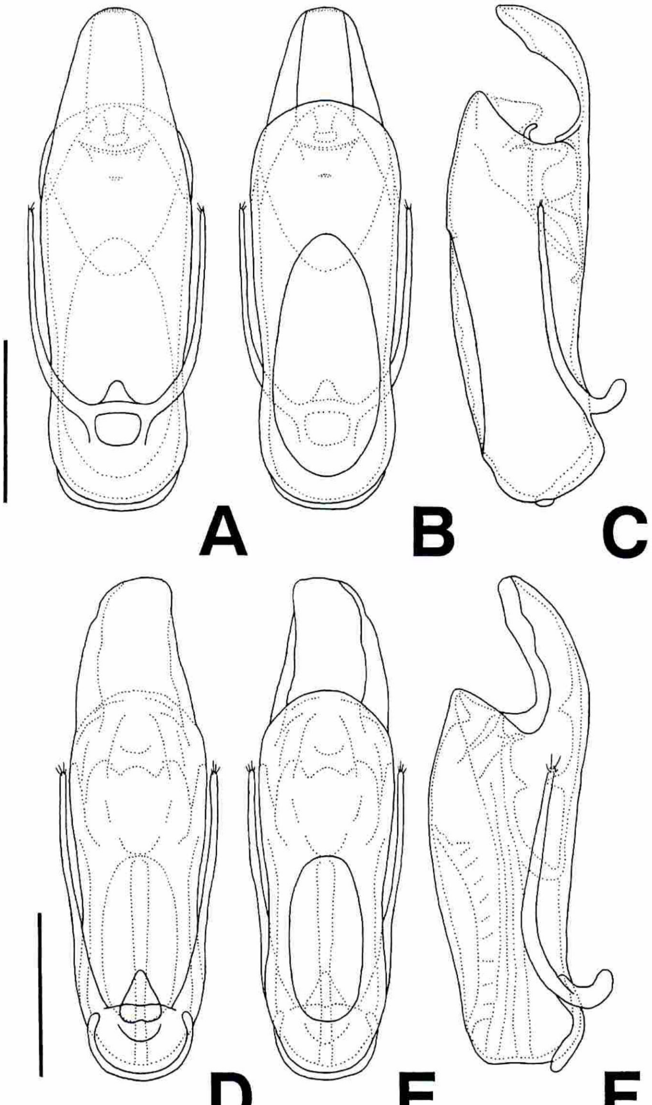


Fig. 4. *Veraphis japonicus* (K. SAWADA), aedeagus in ventral (A, D), dorsal (B, E) and lateral views (C, F). Scale: 0.1 mm.

from disc by shallow transverse groove; lateral ante-basal pits distinct, elongate, connected by shallow transverse groove, which is slightly diffused, best visible in middle. Punctation sparse but well visible, composed of distinct, shallow and diffused punctures; setation relatively long, suberect.

Elytra very slender, flat, widest slightly anterior to middle or in middle, length 0.66– 0.72 mm (mean 0.69 mm), width 0.45–0.50 mm (mean 0.47 mm), EI 1.44–1.47. Basal fovea on each elytron located in shallow, broad impression, closer to scutellum than to humerus; narrow adscutellar area raised and delimited from remaining part of elytra by sharp edge; apices of elytra truncate. Scutellum subtriangular, with rounded and raised apex. Elytral punctation similar to that on pronotum, distinct; setation composed of moderately dense, relatively long suberect basal setae and several erect setae of similar length, well visible along middle line and near lateral margin of each elytron. Hind wings entirely reduced.

Pygidium slightly longer than wide at base, apex rounded, punctation slightly less distinct than that on elytra; setation sparse, short, suberect.

Metasternum with relatively deep, elongate median impression, distinctly broadened in middle, marked from anterior nearly to posterior margin of sternum.

Fore legs (Fig. 3B) with trochanter with expanded posterior margin, rounded; protibia strongly recurved, with large subapical lobe.

Aedeagus (Figs. 6A–C) moderately slender, 0.25 mm in length, distinctly constricted between basal third and middle, strongly curved dorso–ventrally. Dorsal wall with large, very long oval area; apex subtrapezoidal, separated by moderately deep constriction in dorsal wall; each paramere with three very short apical setae.

Female differs from male in slightly shallower and shorter impression on metasternum, protrochanters with posterior and distal margins regularly rounded together, and protibiae without subapical lobe, only slightly recurved. One of only two known females has grooves on vertex similar to those in most males, the other one has modified grooves (Fig. 2D). Body length 1.27–1.36 mm (mean 1.31 mm), length of head 0.15–0.16 mm (mean 0.155 mm), width of head 0.25 mm, length of antennae 0.46 mm, length of pronotum 0.31–0.32 mm (mean 0.315 mm), maximum width of pronotum 0.32–0.34 mm (mean 0.33 mm), width of pronotum at base 0.3 mm, length of elytra 0.64–0.71 mm (mean 0.67 mm), width of elytra 0.45–0.46 mm (mean 0.455 mm), EI 1.42–1.54.

Distribution. Japan: Hokkaido.

Type series. Holotype: ♂, Mt. Otobe (980 m), Otobe Town, Hokkaido, 14–28. VI. 1997, S. HORI leg. (NSMT). Paratypes: 1♂, same data as for the holotype; 1♂, same data except for 28. VI.–12. VII. 1997; 1♂, 1♀, Hirayama, Shirataki Village, Hokkaido, 20. VII.–5. VIII. 1993, by pitfall traps, and 2♂♂, 5. VIII. 1993, S. HORI leg.; 1♂, Nopporo, Ebetsu City, Hokkaido, 20–29. IX. 1999, by urea trap, M. MARUYAMA leg.; 1♂, 1♀, Mt. Midori-dake (1,300–1,400 m), Daisetsu Mts., Hokkaido, H. SUGAYA and M. MARUYAMA leg. Paratypes in NSMT, FU and PCPJ.

Notes. Some degree of variability may be expected in more abundant materials considering differences between two known females.

Etymology. This species is dedicated to Dr. Sadanari HISAMATSU, who has described the first species of *Veraphis* known from Japan.

Veraphis odaigaharensis sp. nov.

[Japanese name: Ôdai-hirata-kokemushi]

(Figs. 2E, I, 5A, 6D–F)

Diagnosis. This species can be distinguished from other members of the group by moderately large body, indistinct pronotal punctation, distinctly subtrapezoidal anterior part of head and unique aedeagus.

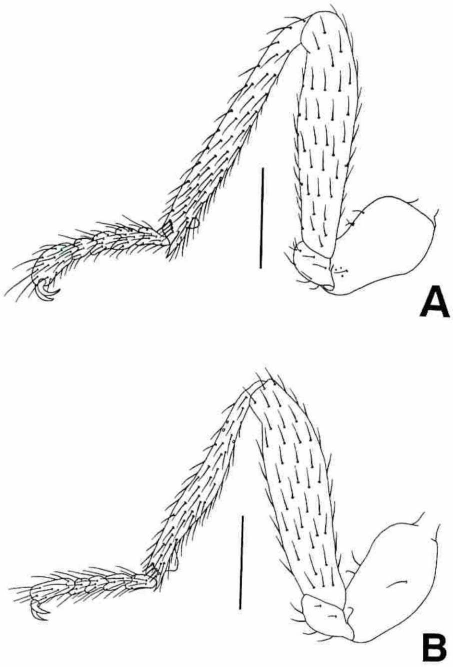


Fig. 5. *Veraphis odaigaharensis* sp. nov. (A) and *V. tottoriensis* sp. nov. (B); right fore leg of male in ventral view. Scale: 0.1 mm.

Description. Body flat and very slender, moderately light brown (elytra slightly darker; legs, palpi and antennae slightly brighter than remaining body parts); setation yellowish.

Male. Body length 1.39–1.44 mm (mean 1.43 mm). Head (Fig. 2E) widest at eyes, length 0.15–0.16 mm (mean 0.16 mm), width 0.24–0.25 mm (mean 0.24 mm). Vertex with moderately convex sides and slightly flattened median part delimited by a pair of shallow, short to moderately long and relatively broad parallel grooves; frons with nearly flat and almost horizontal posterior part and shorter anterior part steeply lowering toward clypeus; supraantennal tubercles only slightly raised, relatively indistinct. Punctation sparse and fine; setation sparse, moderately long, suberect to erect. Antennae (Fig. 2I) 0.47–0.5 mm in length (mean: 0.5 mm), with well separated, loose club composed of antennomeres IX–XI; narrow conical apical parts of antennomeres IX–X delimited from broad subcylindrical basal parts by uneven edge, antennomere XI not excavated.

Pronotum minimally broader than long, widest near anterior third, length 0.3–0.31 mm (mean 0.305 mm), maximum width 0.36–0.37 mm (mean 0.365 mm), width at base 0.34–0.36 mm (mean 0.35 mm). Anterior margin in middle only slightly rounded; lateral margins very slightly rounded, slightly narrowing toward obtuse hind angles; basal margin minimally biemarginate, slightly expanded in middle toward scutellum, expanded part delimited from disc by indistinct transverse groove; lateral basal pits elongate, well marked, transverse groove slightly deeper and more distinct in middle than on sides. Punctation sparse, composed of small, sharply marked punctures; setation sparse, relatively long, suberect, sides with 2–3 distinctly longer erect setae.

Elytra widest slightly anterior to middle or in middle, length 0.72–0.75 mm (mean 0.74 mm), width 0.5 mm, EI 1.44–1.5. Basal fovea on each elytron located in shallow, broad impression, closer to scutellum than to humerus; narrow adscutellar area raised and delimited from remaining part of elytra by sharp edge; apices of elytra truncate. Punctation more distinct than that on pronotum; setation composed of moderately dense, relatively long suberect setae and several erect setae of similar length, well visible along middle line and near lateral margin of each elytron. Hind wings well developed, about twice as long as elytra. Scutellum subtriangular, with rounded and raised apex.

Pygidium as long as wide at base, punctation sparse and fine; setation sparse, short, suberect.

Metasternum with impression identical as in *V. sawadai*.

Protibiae (Fig. 5A) with small subapical lobe, remaining parts of legs not modified.

Aedeagus (Figs. 6D–F) slender, 0.29 mm in length, in dorso-ventral view indistinctly and broadly constricted near middle, in lateral view curved ventrally near base. Dorsal wall with long and narrow oval area; apex subtrapezoidal, very short apical part separated by moderately deep emargination of dorsal wall; each paramere bears three very short apical setae.

Female externally differs from male in lacking subapical lobe on tibiae, and in developement of hind wings which are entirely reduced; antennae, metasternum and vertex as in male. Body length 1.41–1.44 mm (mean 1.44 mm), length of head 0.16 mm, width of head 0.24–0.25 mm (mean 0.25 mm), length of antenna 0.46–0.47 mm (mean 0.47 mm), length of pronotum 0.31–0.32 mm (mean 0.32 mm), maximum width of pronotum 0.37–0.39 mm (mean 0.38 mm), width of pronotum at base 0.34–0.36 mm (mean 0.35 mm), length of elytra 0.72–0.74 mm (mean 0.74 mm), width of elytra 0.5 mm, EI 1.44–1.48.

Distribution. Japan: Honshû (Nara Pref.).

Type series. Holotype: ♂, Mt. Ôdaigahara, Nara Pref., Honshû, 30. V. 1985, S. NOMURA leg. (NSMT). Paratypes: 2♂♂, 9♀♀, same data as the holotype (NSMT, FU, PCPJ).

Etymology. After the type locality, Mt. Ôdaigahara.

Remarks. *Veraphis odaigaharensis* is very similar to *V. japonicus*, but it has larger and usually darker body, and distinctly different aedeagus.

Veraphis tottoriensis sp. nov.

[Japanese name: San-in-hirata-kokemushi]

(Figs. 2F, J, 5B, 6G–I)

Diagnosis. This species can be easily distinguished from similar congeners with 3-segmented antennal club by nearly trapezoidal head with subtriangular anterior margin of frons, and very shallow, parallel grooves on vertex.

Description. Body relatively slender, moderately dark brown, narrow adsutural area on elytra distinctly darker, tarsi, palpi and antennal club slightly lighter; setation sparse and very short, yellowish.

Male. Body length 1.39 mm. Head (Fig. 2F) nearly trapezoidal, widest at eyes, length 0.15 mm, width 0.24 mm. Tempora short, just behind eyes slightly narrowing posteriorly, then more strongly bent toward occiput; vertex with pair of very shallow, parallel grooves, each connected posteriorly with small and indistinct pit adjacent to occipital constriction, area between grooves nearly flat, with uneven surface, sides of vertex only slightly convex; frons subtriangular, moderately steeply lowering toward clypeus. Punctation on anterior part of vertex very distinct, composed of well delimited punctures of various diameters, punctures on convex sides of vertex sparse and much finer; setation sparse, very thin, moderately long, suberect to erect. Antennae (Fig. 2J) 0.5 mm in length, with well separated 3-segmented club, antennomere XI with uneven surface near apex.

Pronotum slightly longer than wide, widest between middle and anterior third, length 0.4 mm, maximum width 0.36 mm, width at base 0.35 mm. Sides slightly narrowing toward obtuse hind angles, with very narrow lateral carina in posterior 2/3; middle third of base slightly expanded toward scutellum; ante-basal transverse groove very well marked, lateral pits only

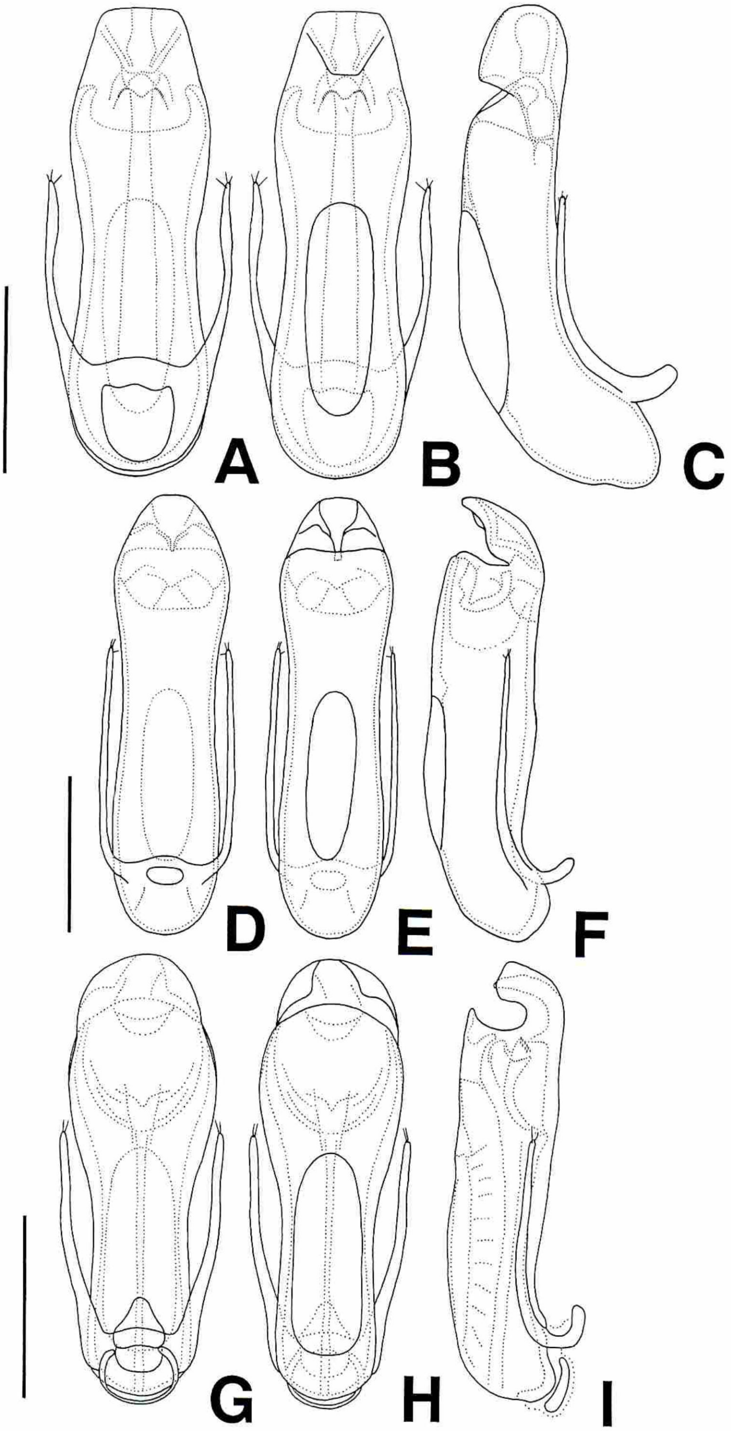


Fig. 6. *Veraphis hisamatsui* sp. nov. (A–C), *V. odaigaharensis* sp. nov. (D–F) and *V. tottoriensis* sp. nov. (G–I); aedeagus in ventral (A, D, G), dorsal (B, E, H) and lateral views (C, F, I). Scale: 0.1 mm.

slightly elongate, distinct. Punctation sparse and fine but relatively well visible; setae sparse, relatively short, setation as thin as that on head, suberect.

Elytra widest slightly anterior to middle, length 0.67 mm, width 0.49 mm, EI 1.37. Humeral callus moderately distinct, demarcated by very shallow and short internal humeral impression; single basal fovea on each elytron very small, located slightly closer to scutellum than to humerus; relatively broad adscutellar area distinctly raised and delimited from disc by sharp edge. Elytral punctation sparse and fine; setation sparse, very short, suberect. Hind wings well developed, about twice as long as elytra. Scutellum moderately large, triangular with rounded and raised apex.

Pygidium about as long as wide at base; punctation sparse and fine; setation sparse, short, only slightly suberect.

Metasternum with very shallow median impression, nearly reaching posterior margin of sternum.

Fore legs (Fig. 5B) with non-modified trochanters, protibiae recurved, with large subapical lobe.

Aedeagus (Figs. 6G–I) 0.25 mm in length, in dorso-ventral view strongly broadened in distal half, in lateral view slightly curved ventrally near base. Dorsal wall with broad and long oval area; apex of median lobe rounded, very short apical part separated by moderately deep emargination of dorsal wall; each paramere with two very short apical setae.

Female. Unknown.

Distribution. Japan: W Honshû (Tottori Pref.).

Type series. Holotype: ♂, Mt. Kyûsyô, Tottori City, Tottori Pref., Honshû, 7. VI. 1984, S. NOMURA leg. (NSMT).

Etymology. After the type locality, Tottori Prefecture.

Species group *sawadai*

Species belonging to this group have well separated, 3-segmented antennal club with non-excavated antennomere XI in both sexes; males with not modified protrochanters, protibiae with subapical lobe, metasternum with median impression, without median carina, and aedeagus without apical setae, but with distinctly emarginate or notched apex in dorso-ventral view. This group comprises only Japanese species: *V. sawadai* sp. nov. and *V. kurbatovi* sp. nov.

Key to species of the *sawadai* group

1. Antennomeres VII and VIII distinctly broader than long. .... *V. sawadai* sp. nov.
— Antennomeres VII and VIII longer than wide. .... *V. kurbatovi* sp. nov.

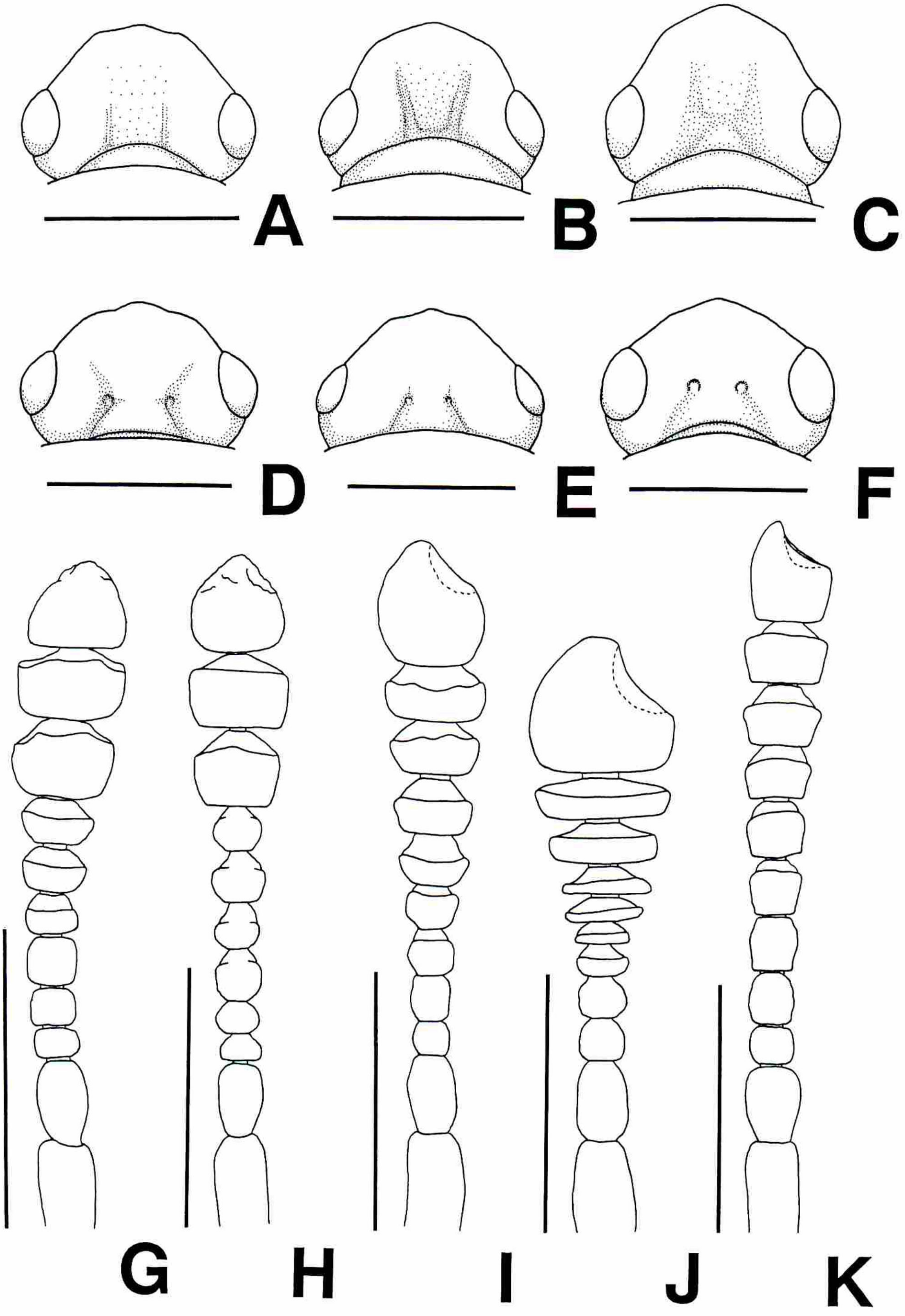


Fig. 7. *Veraphis sawadai* sp. nov. (A, G), *V. kurbatovi* sp. nov. (B, C, H), *V. irkutensis* (REITTER) (D, E, I, J), and *V. horianus* sp. nov. (F, K); schematic outline of head in dorsal view (males: A, B, D, F; females: C, E), right antenna of male (G–I, K) and female (J) in dorsal view. Scale: 0.2 mm.

Veraphis sawadai sp. nov.

[Japanese name: Mutsu-hirata-kokemushi]
(Figs. 7A, G, 8A, 9A–C)

Diagnosis. The only one known specimen of this species differs from all Palearctic congeners in the shape of grooves on vertex, which are very shallow and relatively indistinct, posteriorly connected with a pair of shallow pits located in occipital constriction.

Description. Body slender and flat, reddish-brown, setation short, yellowish.

Male. Body length 1.26 mm. Head (Fig. 7A) widest at eyes, length 0.15 mm, width 0.24 mm. Vertex convex on sides and flattened in middle, with a pair of shallow parallel grooves connected posteriorly to a pair of shallow pits located in occipital constriction; frons with almost flat and nearly horizontal posterior part, and shorter anterior part steeply lowering toward clypeus; supraantennal tubercles indistinct. Punctation very fine and sparse, hardly noticeable; setation sparse, moderately long, suberect to erect. Antennae (Fig. 7G) 0.45 mm in length, with well separated loose club composed of antennomeres IX–XI, narrow conical apical part of antennomeres IX–X delimited from broad subcylindrical basal part by uneven edge, antennomere XI not excavated, with uneven surface.

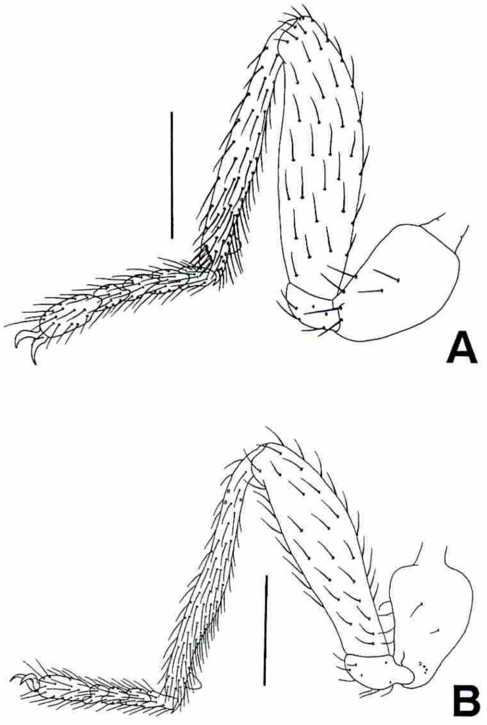


Fig. 8. *Veraphis sawadai* sp. nov. (A) and *V. kurbatovi* sp. nov. (B); right fore leg of male in ventral view. Scale: 0.1 mm.

Pronotum as broad as long, widest near anterior third, length 0.29 mm, maximum width 0.31 mm, width at base 0.29 mm. Anterior margin only slightly rounded in middle; lateral margins minimally rounded, distinctly narrowing from widest site to obtuse hind angles; base in middle slightly expanded toward scutellum, expanded part delimited from disc by shallow transverse groove; lateral ante-basal pits elongate and relatively deep, connected by shallow transverse groove, which is more distinctly marked in middle. Punctation fine and sparse; setation sparse, relatively short, suberect, sides of pronotum bear two pairs of long erect setae; one pair slightly behind widest site, the other pair close to laterobasal pits.

Elytra elongate, moderately flat, widest just anterior to middle, length: 0.62 mm, width: 0.4 mm, EI: 1.55. Internal basal fovea on each elytron relatively shallow, located in shallow, broad impression, closer to scutellum than to humerus; narrow adscutellar area raised and delimited from remaining part of elytra by sharp edge; apices of elytra truncate. Punctation sparse and very fine, hardly noticeable. Hind

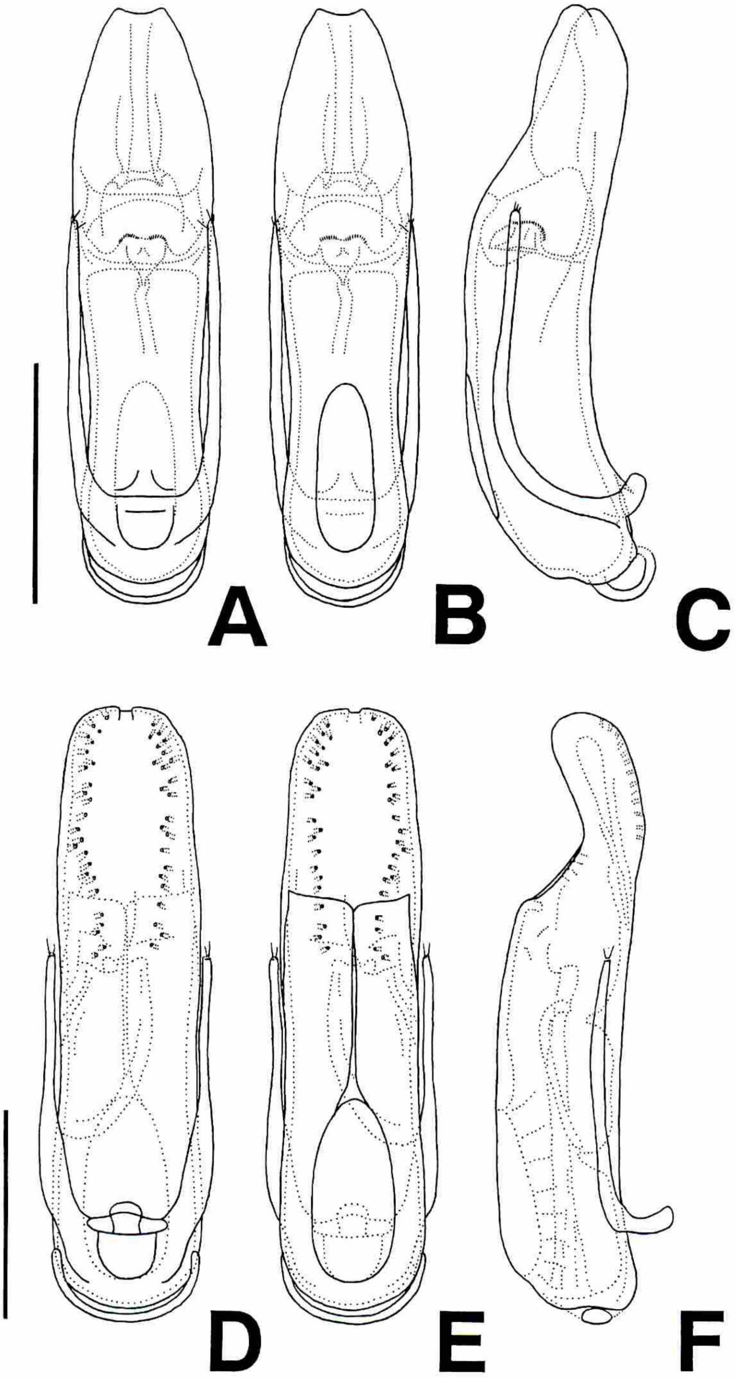


Fig. 9. *Veraphis sawadai* sp. nov. (A–C) and *V. kurbatovi* sp. nov. (D–F), aedeagus in ventral (A, D), dorsal (B, E) and lateral views (C, F). Scale: 0.1 mm.

wings entirely reduced. Scutellum subtriangular, with rounded and raised apex.

Pygidium nearly as long as wide at base, apex rounded, punctation more distinct than that on elytra; setation sparse, short, suberect.

Metasternum with very shallow, hardly visible elongate median impression marked from anterior margin to posterior 1/4–1/5.

Protibiae (Fig. 8A) with small subapical lobe, remaining parts of legs not modified.

Aedeagus (Figs. 9A–C) 0.25 mm in length, very slender, in dorso-ventral view minimally constricted in basal third, slightly curved dorso-ventrally, with small, elongate oval area on dorsal wall located near base, apical part narrowed, with distinct apical emargination, apex of each paramere with three very small setae.

Female. Unknown.

Distribution. Japan: N Honshû (Fukushima Pref.)

Type series. Holotype: ♂, Adatara, Makugawa Spa, Fukushima Pref., Honshû, 19. VII. 1989, S. NOMURA leg. (NSMT).

Etymology. This species is dedicated to a Japanese entomologist, Dr. Kôhei SAWADA.

Veraphis kurbatovi sp. nov.

[Japanese name: Michinoku-hirata-kokemushi]

(Figs. 7B, C, H, 8B, 9D–F)

Diagnosis. This new species can be distinguished from its Japanese congeners by relatively broad body, head strongly expanded anteriorly, and unique aedeagus.

Description. Body relatively broad, reddish-brown, palpi and tarsi slightly lighter, overall setation rather short, suberect, yellowish.

Male. Body length 1.29 mm. Head (Fig. 7B) wider than long, widest at eyes, length 0.16 mm, width 0.24 mm. Tempora relatively short, moderately narrowing posteriorly; vertex with pair of shallow but well delimited, broad and anteriorly slightly divergent grooves, area between grooves slightly impressed, sides of vertex slightly convex; space between anterior margins of eyes and weakly marked supraantennal tubercles relatively long; frons subtrapezoidal, steeply lowering anteriorly. Punctation sparse and rather fine, sides of vertex near internal margins of eyes with several more distinct, well visible punctures; setation sparse, moderately long, suberect to erect, setae very thin. Antennae (Fig. 7H) 0.52 mm in length, with well delimited club composed of antennomeres IX–XI, antennomere XI with indistinct and very shallow, irregular subapical impression.

Pronotum broader than long, length 0.31 mm, maximum width 0.37 mm, width at base 0.36 mm. Narrow lateral margins in posterior 2/3 delimited from disc by distinct carina; hind angles very slightly obtuse; base arcuate, minimally biemarginate with median third slightly expanded toward scutellum; ante-basal transverse groove very short and shallow, barely visible; lateral pits well marked, elongate. Punctation sparse and very fine; setation relatively sparse, composed of thin, moderately long and suberect setae.

Elytra widest just anterior to middle, length 0.7 mm, width 0.5 mm, EI 1.4. Humeral callus moderately distinct, but with relatively well visible, tiny humeral denticle; internal humeral impression shallow, border between callus and impression sharply marked; single basal fovea on each elytron located slightly closer to scutellum than to humerus; relatively broad adscutellar area distinctly raised and delimited from disc by sharp edge. Elytral punctation fine and sparse; setation relatively sparse and short, setae thicker than those on head and pronotum, suberect; additionally posterior half of elytra with several erect setae not longer than basic setae. Hind wings entirely reduced. Scutellum moderately large, triangular, with rounded and raised apex.

Pygidium slightly broader than long; punctation sparse and fine; setation sparse, short, only slightly suberect.

Metasternum with median longitudinal impression, distinct in anterior half, shallow in posterior half, not reaching posterior margin of sternum.

Fore legs (Fig. 8B) with non-modified trochanters, protibiae recurved, with relatively large subtriangular subapical lobe.

Aedeagus (Figs. 9D–F) 0.3 mm in length, very slender, in dorso-ventral view with barely noticeable, broad constriction between basal third and middle, in lateral view nearly straight except for apical part slightly bent dorsally. Median lobe with small, broad, elongate, and oval area located near base of dorsal wall, apex rounded, with distinct median apical notch, each paramere with two very small apical setae.

Female larger than male, protibiae not modified, grooves on vertex (Fig. 7C) shallow and broad, metasternum with rather narrow impression confined to anterior half of sternum, antennae as in male; wingless. Body length 1.41 mm, length of head 0.16 mm, width of head 0.25 mm, length of antenna 0.5 mm, length of pronotum 0.34 mm, maximum width of pronotum 0.41 mm, width of pronotum at base 0.4 mm, length of elytra 0.79 mm, width of elytra 0.54 mm, EI 1.46.

Distribution. Japan: N Honshû (Fukushima Pref.).

Type series. Holotype: ♂, Futamata Valley (850 m), Ten-ei Village, Fukushima Pref., Honshû, 19. X. 2003, S. NOMURA leg. (NSMT). Paratype: ♀, same data as for the holotype (NSMT).

Etymology. This species is dedicated to a Russian entomologist, Serguei KURBATOV, who described many species of the Scydmaenidae from the Far East.

Species group *irkutensis*

Males of species belonging to this group have slender antennae gradually thickening toward apex, without separated club, antennomere XI with small but distinct excavation; protrochanters not modified; protibiae without subapical lobe; metasternum in anterior part with a pair of very thin parallel grooves or a single, low and very narrow median carina, and aedeagus not constricted near apex, without apical notch but with apical setae. Moreover, females of one species have antennae distinctly shorter than those of male and strongly thickened toward apex. The other species is known from a single male only. This group comprises *V. irkutensis* (REITTER) from Siberia and Mongolia and *V. horianus* sp. nov. from Hokkaido.

Key to species of the *irkutensis* group

1. Antennomeres VII–X utmost twice as broad as long. ·········males···2
— Antennomeres VII–X each over 3 times as broad as long. ··
··· female of *V. irkutensis* (Reitter)
2. Antennomeres VII–IX distinctly broader than long. ························· *V. irkutensis* (Reitter)
— Antennomeres VII–IX about as wide as long. ······································· *V. horianus* sp. nov.

Veraphis irkutensis (Reitter)

(Figs. 7D, E, I, J, 10A, 11A–C)

Euthia irkutensis Reitter, 1896: 64; Jakobson, 1910: 590; Csiki, 1919: 5.
Euthia euplecticornis Reitter, 1896:64; Jakobson, 1910: 590; Csiki, 1919: 4.
Veraphis irkutensis (Reitter); Franz 1970: 76, figs. 12a–c; O'Keefe and Li, 1998: 158.

Diagnosis. Male of this species has strongly depressed median part of vertex and frons, a pair of fine, parallel grooves in anterior two-thirds of metasternum, and fore legs without any particular characters; the only one known female is characteristic by having shallow pits on vertex, small eyes, strongly modified apical part of antenna, and metasternum with similar grooves as those in males, but distinctly shorter.

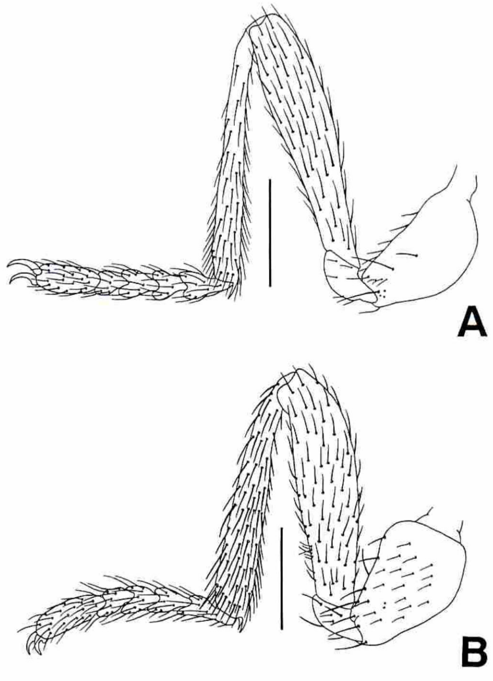


Fig. 10. *Veraphis irkutensis* (Reitter) (A), and *V. horianus* sp. nov. (B); right fore leg of male in ventral view. Scale: 0.1 mm.

Redescription. Body slender and flat, reddish-brown to dark brown, antennae and pygidium slightly brighter, legs and palpi yellowish-brown; body covered with short, silver setation.

Male. Body length 1.35–1.42 mm (mean 1.38 mm). Head (Fig. 7D) widest at eyes, length 0.16–0.17 mm (mean 0.16 mm), width 0.25–0.26 mm (mean 0.26 mm). Sides of vertex distinctly convex and delimited from depressed median part by pair of grooves divergent posteriorly, anterior end of each groove connected with small, indistinct tubercle (in paratypes less distinct than in the holotype, or not visible), grooves prolonged toward frons and then, anterior to tubercles, slightly divergent toward clypeus, anterior parts of grooves indistinct and slightly irregular in shape. Frons slightly convex, moderately lowering anteriorly; supraantennal tubercles not marked. Median part of vertex between grooves with sparse, irregular and slightly diffused wrinkles,

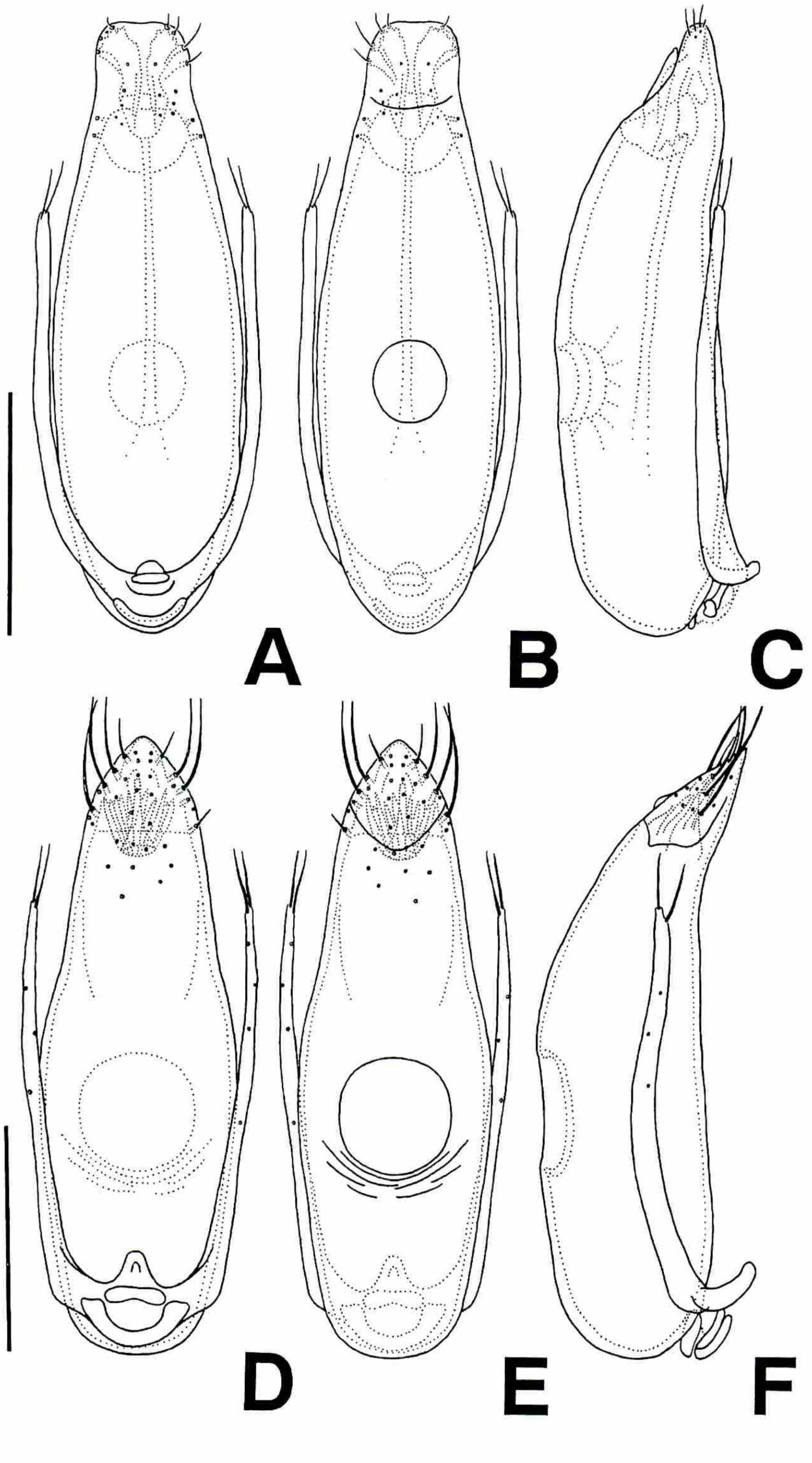


Fig. 11. *Veraphis irkutensis* (REITTER) (A–C) and *V. horianus* sp. nov. (D–F); aedeagus in ventral (A, D), dorsal (B, E) and lateral views (C, F). Scale: 0.1 mm.

punctation on remaining parts of head very fine, hardly noticeable; setae sparse and short, suberect to erect. Antennae (Fig. 7I) gradually thickened toward apex, length 0.54–0.55 mm (mean 0.54 mm), antennomere XI with distinct excavation.

Pronotum as wide as long, widest near anterior third, length 0.29–0.3 mm (mean 0.3 mm), maximum width 0.3–0.32 mm (mean 0.31 mm), width at base 0.29–0.3 mm (mean 0.3 mm). Anterior margin regularly rounded, sides straight, slightly narrowing posteriorly; hind angles minimally obtuse; base nearly straight. Pronotum with two pairs of diffused, shallow lateral impressions, internal pair connected by transverse, shallow groove. Punctation of disc sparse, composed of very shallow punctures with diffused margins, area posterior and lateral to basal impressions with uneven surface; setation relatively sparse and short, recumbent to suberect.

Elytra widest slightly anterior to middle, length 0.7–0.75 mm (mean 0.72 mm), width 0.5–0.52 mm (mean 0.51 mm), EI 1.4–1.44. Basal fovea on each elytron located in broad and shallow basal impression, closer to scutellum than to humerus; narrow area adjacent to scutellum raised and distinctly delimited by sharp edge. Punctation of elytra more distinct than that on pronotum, punctures relatively sparse, shallow and slightly diffused, slightly more dense on posterior third; setation sparse, short, suberect. Hind wings well developed. Scutellum subtriangular with rounded and raised apex.

Pygidium longer than wide, apex rounded, surface covered with punctures silimar to those on elytra; setation sparse, nearly recumbent.

Metasternum in anterior two thirds with a pair of very thin but sharply marked parallel grooves.

Fore legs (Fig. 10A) without specific characters.

Aedeagus (Figs. 11A–C) 0.25 mm in length, in dorso-ventral view distinctly broadened in basal third, then narrowing toward subrectangular and slightly rounded apex, with two groups of asymmetrically distributed and relatively short lateral apical setae. Dorsal hymenous area very small, nearly circular; in lateral view median lobe minimally curved dorso-ventrally. Each paramere bears two relatively long apical setae.

Female easily distinguishable from male by larger body size, smaller eyes and more shallow grooves on vertex (Fig. 7E), shorter grooves on metasternum, and strongly thickened, shorter antennae with very large and deeply excavated antennomere XI (Fig. 7J). Body length 1.44 mm, length of head 0.17 mm, width of head 0.27 mm, length of antenna 0.47 mm, length of pronotum 0.35 mm, maximum width of pronotum 0.37 mm, width of pronotum at base 0.34 mm, length of elytra 0.72 mm, width of elytra 0.54 mm, EI 1.33.

Distribution. E Siberia (Irkutsk env.), N Mongolia.

Materials examined. Holotype: ♂, small, printed label "Mongolia bor., Reitter", small label printed in red "Typus", larger, handwritten label "*Veraphis irkutensis* REITT., ♂" and printed "det. H. FRANZ" (HNHM). Paratypes: ♀, same locality and identical location label as the holotype, small label with printed "♀", large label with red margins, printed in red "Typus" and "Coll. REITTER", and written in black "1896, *Euthia euplecticornis* REITT., W.E.Z. XV.1896.64", small label handwritten in black "*E. euplecticornis* m. 1896", and large label handwritten in blue "*Veraphis irkutensis* REITT., ♀" and printed "det. H. Franz" (HNHM); 2♂♂, small printed label "Quelgebiet des Irkut, Leder.", identification label as above except for "*Euthia irkutensis* REITT.", one specimen with additional original REITTER's handwritten label "*E. irkutensis* m. 1896", both with standard identification labels added by FRANZ, like remaining types (HNHM).

Veraphis horianus sp. nov.

[Japanese name: Ainu-hirata-kokemushi]

(Figs. 7F, K, 10B, 11D–F)

Diagnosis. The only known male of this species differs from other Palearctic congeners in having a pair of distinct, relatively large and well delimited foveae on vertex, small excavation on antennomere XI, single median carina in anterior half of metasternum, and non-modified fore legs.

Description. Body slender and flat, dark brown, head slightly darker than pronotum and elytra, narrow adsutural area on elytra and apex of pygidium slightly lighter, legs, antennae and palpi light brown; setation short, yellowish.

Male. Body length 1.38 mm. Head (Fig. 7F) widest at very large eyes, length 0.16 mm, width 0.26 mm. Vertex slightly depressed in middle, with pair of well delimited, relatively large, circular median pits located in depression and connected to a pair of shallow and posteriorly divergent grooves, sides of vertex only slightly convex; frons slightly convex, moderately steeply lowering toward clypeus; supraantennal tubercles minimally raised. Punctation very fine and sparse, hardly noticeable; setation sparse, moderately long, suberect to erect. Antennae (Fig. 7K) gradually thickened toward apex, length 0.57 mm, antennomere XI with distinct excavation.

Pronotum slightly wider than long, with sides parallel from anterior 1/4–1/3 to base, length 0.3 mm, maximum width 0.37 mm. Anterior margin regularly rounded, sides straight, slightly narrowing in very short posterior part (hardly visible), so that posterior angles are slightly obtuse; base slightly but distinctly rounded; four basal impressions shallow and diffused, external pair slightly more distinct, internal impressions very indistinct and connected by shallow transverse groove. Punctation very fine and sparse, area posterior to basal groove with slightly uneven surface, with diffused wrinkles; setation relatively short and sparse, suberect.

Elytra elongate, widest slightly anterior to middle, length 0.75 mm, width 0.54 mm, EI 1.39. Internal basal fovea on each elytron relatively shallow, located in shallow, broad impression, closer to scutellum than to humerus; narrow adscutellar area raised and delimited from remaining part of elytra by sharp edge. Elytral punctation fine and sparse, punctures with diffused margins; setation short, sparse, only slightly suberect. Hind wings well developed. Scutellum subtriangular, with rounded and raised apex.

Pygidium only slightly longer than wide, apex rounded, punctation similar to that on elytra, setation slightly shorter.

Metasternum in anterior half with single, low and very narrow median carina, distinctly lowering and narrowing posteriorly.

Fore legs (Fig. 10B) without particular characters.

Aedeagus (Figs. 11D–F) 0.27 mm in length, in dorso-ventral view broadened in basal third, then narrowing toward subtriangular and slightly rounded apex, with asymmetrically distributed, moderately long to very long and thick apical setae. Dorsal hymenous area moderately large, nearly circular; in lateral view median lobe near apex distinctly curved ventrally. Each paramere bears two relatively long apical setae.

Female. Unknown.

Distribution. Japan: Hokkaido.

Type series. Holotype: ♂, Mikuni Pass, Kamikawa-Horokanai Town, Hokkaido, 29. VI. 2002, 4–7 P.M., collected by car netting, S. HORI leg. (NSMT).

Etymology. This species is dedicated to Mr. Shigehisa HORI, who collected many interesting Eutheiini and other rare Scydmaenidae in Hokkaido.

Veraphis engelmarki FRANZ

Diagnosis. *Veraphis engelmarki* can be distinguished from all other Palearctic species by the following set of characters: body of males dark brown to nearly black, females usually slightly lighter, appendices light brown or yellowish; antennae of males slender and long, gradually thickening toward apex, antennomere XI with small but well visible excavation; antennae of females much shorter, strongly thickening toward apex, antennomere XI with large excavation; in both sexes median part of vertex strongly impressed and well delimited from convex sides; elytra with very small basal foveae; protrochanters in males modified, with expanded and bent postero-distal margin forming distinct angle; protibiae of males with subapical lobe; metasternum of males with low and narrow median carina in anterior half and distinct impression in distal third, and aedeagus in dorso-ventral view strongly constricted near apical third to fourth, apex with median notch and two lateral groups of setae. Both males and females have well developed metathoracic wings.

Remarks. *Veraphis engelmarki* was described from North Sweden; it is also known to occur in Finland (FRANZ, 1970; LUNDBERG, 1972; 1974; 1975; 1988; 1989; 1994; 2001; PETTERSSON, 1992; PETTERSSON and LUNDBERG, 1993). During the present study it was found out that *V. fatiloquus* KURBATOV from the Russian Far East and two taxa newly discovered in Hokkaido and North Korea shared with the holotype of *V. engelmarki* a very similar, unique shape of the aedeagus. Moreover, modifications of protrochanters of males are very similar in specimens from Scandinavia and the Far East. Further features shared by the studied specimens are modifications of the metasternum, sexual dimorphism well expressed in the shape of the antenna, dark body pigmentation, very small basal foveae on elytra and strongly impressed median part of the vertex. Significant differences between specimens from various localities can be found in proportions of antennomeres, the shape of pronotum, the body length and minor details of the aedeagus. This diversity is regarded herein to reflect rather a subspecific than specific status. Therefore, *Veraphis engelmarki* is divided into four subspecies: *V. e. engelmarki* FRANZ from Scandinavia, *V. e. fatiloquus* KURBATOV from the Russian Far East, *V. e. koreanus* subsp. nov. from Korea, and *V. e. niponensis* subsp. nov. from Hokkaido.

Key to subspecies of *Veraphis engelmarki* FRANZ

1. Antennae long and slender, only slightly thickened toward apex; protibiae with subapical lobe. .... males. 2

— Antennae short, strongly thickened toward apex; protibiae without subapical lobe. .... females. 5

2. Pronotum as long as wide; body length about 1.3 mm. Primorie. .... *V. e. fatiloquus* KURBATOV

— Pronotum wider than long or as long as wide, but then body more than 1.5 mm in length. ··· 3

3. Antennomeres III–VIII about as long as wide, antennomere X wider than long. Hokkaido. ·· .... *V. e. niponensis* subsp. nov.

— At least antennomeres IV–VI distinctly elongate. 4

4. Body length 1.48–1.53 mm; antennomere III slightly elongate. Scandinavia. .... *V. e. engelmarki* FRANZ

— Body length 1.55–1.68 mm; antennomere III subquadrate or slightly shorter than wide. Korea. .... *V. e. koreanus* subsp. nov.

5. Antennomere X about 3 times as wide as long. Primorie. .... *V. e. fatiloquus* KURBATOV

— Antennomere X only about 1.5 times as wide as long. Scandinavia. .... *V. e. engelmarki* FRANZ

Veraphis engelmarki engelmarki FRANZ

(Figs. 12A, B, G, H, 13A, 14A–C)

Veraphis engelmarki FRANZ, 1970: 78, figs. 13a–c; LUNDBERG, 1972: 171; 1974: 87, 93; 1975: 17, 34; 1988: 83; 1989: 140; 1994: 121; 2001: 99; PETTERSSON, 1992: 110–111; PETTERSSON and LUNDBERG, 1993: 28, 31; JAŁOSZYŃSKI, 2003, figs. 3C, 4C, 5E, F.

Diagnosis. *Veraphis engelmarki engelmarki* is the only European representative of the genus; it can be distinguished from the Far East subspecies by moderate body size, proportions of antennomeres and the aedeagus, which is straight in lateral view.

Redescription. Body of moderate size, males dark brown with nearly black head, females with slightly lighter elytra and margins of pronotum (especially anterior and posterior), both sexes have light brown to yellowish legs, antennae and palpi; setae short, sparse, suberect, yellowish.

Male. Body length 1.48–1.53 mm (mean 1.5 mm). Head (Fig. 12A) widest at eyes, length 0.12–0.17 mm (mean 0.14 mm), width 0.26–0.29 mm (mean 0.22 mm). Tempora regularly rounded, strongly narrowing posteriorly; vertex with pair of deep, arcuate grooves, each with small pit near middle of head length, area between grooves strongly impressed, with slightly uneven surface, sides of vertex convex; frons subtriangular, weakly lowering anteriorly; supra-antennal tubercles indistinct. Punctation barely noticeable; setation very sparse, moderately long, composed of very thin, suberect to erect setae. Antennae (Fig. 12G) relatively long and slender, gradually and only slightly thickened toward apex, without club, length 0.60–0.65 mm (mean 0.62 mm), antennomere XI with small but distinct subapical excavation.

Pronotum wider than long, widest near anterior fourth, length 0.31 mm, maximum width 0.37–0.39 mm (mean 0.38 mm), width at base 0.35–0.36 mm (mean 0.355 mm). Lateral carina in posterior 2/3 very narrow; hind angles minimally obtuse; ante-basal groove well marked; lateral pits very distinct, deep and elongate. Punctation fine and sparse but well noticeable; setation relatively sparse, composed of setae thicker than those on head, short, only slightly suberect.

Elytra widest at middle or just anterior to middle, length 0.80 mm, width 0.56–0.57 mm (mean 0.565 mm), EI 1.4–1.43. Humeral callus prominent, well delimited by short but very distinct internal humeral impression; single basal fovea on each elytron very small, located much closer to scutellum than to humerus; narrow adscutellar area slightly raised and delimited from disc by sharp edge. Elytral punctation moderately dense, composed of relatively large but very shallow punctures with diffused margins; setation short and sparse, suberect. Hind wings well developed. Scutellum triangular with rounded, not raised or only slightly raised apex.

Pygidium triangular with rounded apex, about as long as wide at base, with sparse, shallow and diffused punctures and sparse, short and slightly suberect setae.

Metasternum with narrow and low median carina in anterior half, carina reducing in width toward pointed apex, posterior third of sternum with distinct and elongate impression, lateral margins of impression distinctly raised.

Fore legs modified (Fig. 13A); protrochanter with expanded and strongly bent postero-distal margin forming distinct angle; profemur with dense group of setae in basal 1/6–1/5 of ventral margin; protibia recurved, with subapical lobe.

Aedeagus (Figs. 14A–C) 0.27 mm in length, slender, in lateral view straight, in dorso-ventral view with well separated apical part, apex with large median notch and two lateral groups of long setae; dorsal hymenous area relatively large, oval; each paramere bears two relatively long apical setae.

Female distinctly differs from male in proportions of antennomeres as in fig. 12H; lighter body coloration; indistinct pits on vertex (Fig. 12B); lack of modifications of fore legs; and metasternum with similar carina, but with barely marked posterior impression. Body length 1.45 mm, length of head 1.16 mm, width of head 0.26 mm, length of antenna 0.5 mm, length of pronotum 0.3 mm, maximum width of pronotum 0.36 mm, width of pronotum at base 0.31 mm, length of elytra 0.74 mm, width of elytra 0.52 mm, EI 1.42.

Distribution. Scandinavia: N Sweden and Finland.

Materials examined. Holotype: ♂, white label handwritten in pencil "Lul. [i.e. Luleå] Suobbat, 4.6.68. T-B-E [i.e. T.-B. Engelmark]", white label handwritten in ink "Umg. [env.] Yokkmokk, Luleå - Lappmark, Suobbat l. Vaimet", small label with printed "♂", yellowish label handwritten in ink "*Veraphis engelmarki* m." and printed "det H. FRANZ", and red handwritten label "Typus" (NMW). Allotype: ♀, the same labels except for the first one written in ink: "Lu. Lpm. [Luleå Lappmark], Suobbat, 5.6.68. T-B.E", small label with printed "♀" and red handwritten label "Allotypus" (NMW). Additional material studied: ♂, N Sweden, Blåkölen, 21. VII. 1992, Stig LUNDBERG leg. (PCPJ).

Remarks. According to the literature, this species has been collected in Scandinavia in *Picea* forests, it seems to be associated with rotten spruce wood.

Veraphis engelmarki fatiloquus KURBATOV

(Figs. 12C, D, I, J, 13B, 14D–F)

Veraphis fatiloquus KURBATOV, 1995: 944, figs. 1–4; O'KEEFE and LI, 1998: 158.

Diagnosis. This subspecies can be identified on the basis of its small body, shallow median impression on vertex (especially in females), very stout and very strongly thickened antenna in females, and aedeagus distinctly curved dorso-ventrally.

Redescription. Body small, coloration and setation as in the nominotypical subspecies.

Male very similar to that of *V. e. engelmarki*, except for the following characters. Body distinctly smaller, length 1.29 mm; head (Fig. 12C) with relatively shallow impression between

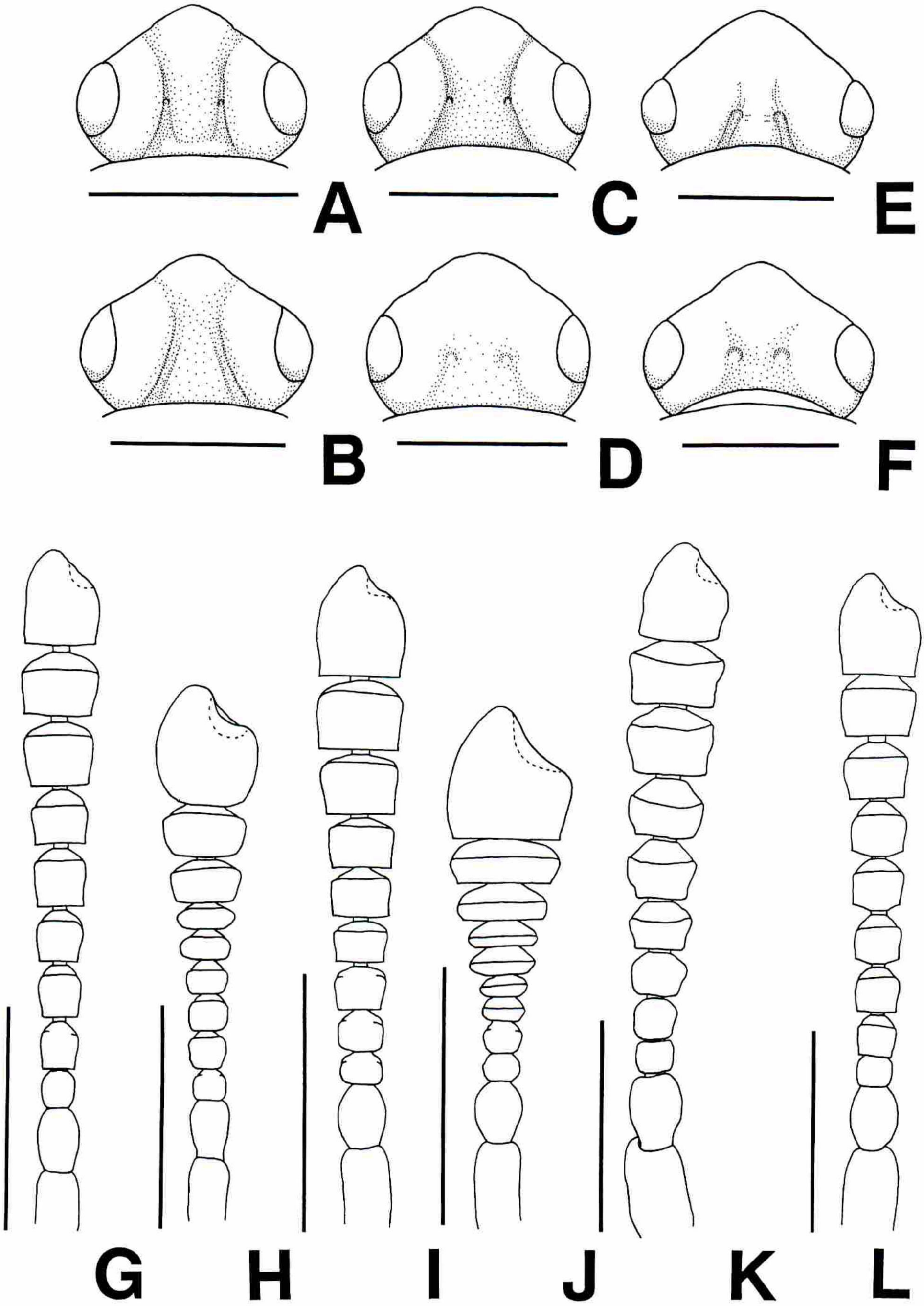


Fig. 12. *Veraphis engelmarki engelmarki* FRANZ (A, B, G, H), *V. engelmarki fatiloquus* KURBATOV (C, D, I, J), *V. engelmarki niponensis* subsp. nov. (E, K) and *V. engelmarki koreanus* subsp. nov. (F, L); schematic outline of head in dorsal view (males: A, C, E, F; females: B, D), right antenna of males (G, I, K, L) and females (H, J) in dorsal view. Scale: 0.2 mm.

grooves on vertex, length 0.15 mm, width 0.27 mm; antenna (Fig. 12I) more stout, only antennomeres I–II and XI elongate, length 0.52 mm; pronotum as long as wide, length 0.31 mm, maximum width 0.31 mm, width at base 0.29 mm; length of elytra 0.71 mm, width of elytra 0.51 mm, EI 1.39. Pygidium, legs (Fig. 13B) and metasternum as in *V. e. engelmarki*.

Aedeagus (Figs. 14D–F) 0.26 mm in length, very similar to that of the nominotypical subspecies but in lateral view distinctly curved, in dorso-ventral view median lobe slightly broader, sides of apical part less rounded, apical setae sparser, dorsal hymenous area smaller, less elongate; parameres more strongly recurved.

Female very similar to that of *V. e. engelmarki*, but differs in the following characters. Body smaller, length 1.35 mm; head (Fig. 12D) with much shallower median impression, length 0.15 mm, width 0.26 mm; antennae (Fig. 12J) shorter, length 0.42 mm, antennomeres V–XI much more transverse; pronotum with slightly more rounded sides, length 0.3 mm, maximum width 0.36 mm, width at base 0.34 mm; length of elytra 0.7 mm, width of elytra 0.51 mm, EI 1.37.

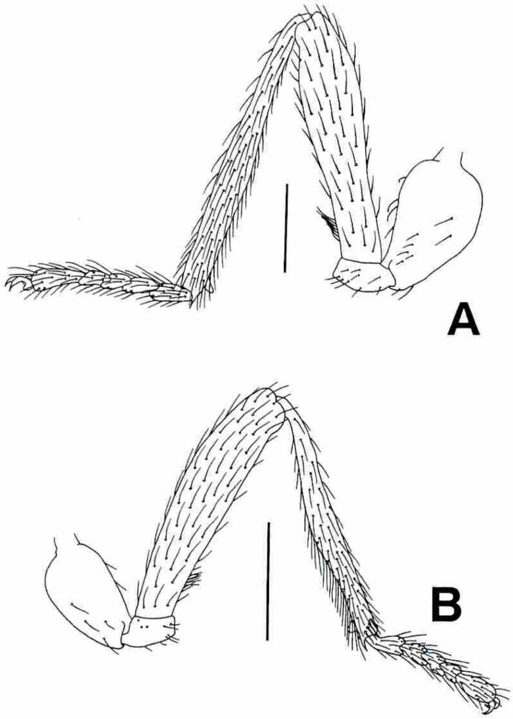


Fig. 13. *Veraphis engelmarki engelmarki* FRANZ (A) and *V. engelmarki fatiloquus* KURBATOV (B); right (A) and left (B) fore leg of male in ventral view. Scale: 0.1 mm.

Distribution. Russian Far East: Primorie.

Materials examined. Paratype: ♂, white printed label "29. 06. 1990, Ю Приморье, зап. склон г. Ольховой, в трухлявом хвойном, С. Курбатов [i.e. S Primorie, west slope of Mt. Olkhovoy, in rotten Juniperus wood, S. KURBATOV]", yellow printed label "Paratypus" and white handwritten label "*Veraphis fatiloquus* sp. nov." (PCSK). Addional material studied: ♀, same data as the paratype except for 30. vi. 1990, collected from rotten spruce wood (PCSK).

Veraphis engelmarki niponensis subsp. nov.

[Japanese name: Tairiku-hirata-kokemushi]

(Figs. 12E, K, 15A, 16A–C)

Diagnosis. Males of this subspecies can be identified on the basis of large body, strongly impressed median part of vertex, rather stout antennae and aedeagus slightly curved dorso-ventrally. Female characters unknown.

Description. Body large, nearly black, legs, palpi and antennae light brown; setation as in

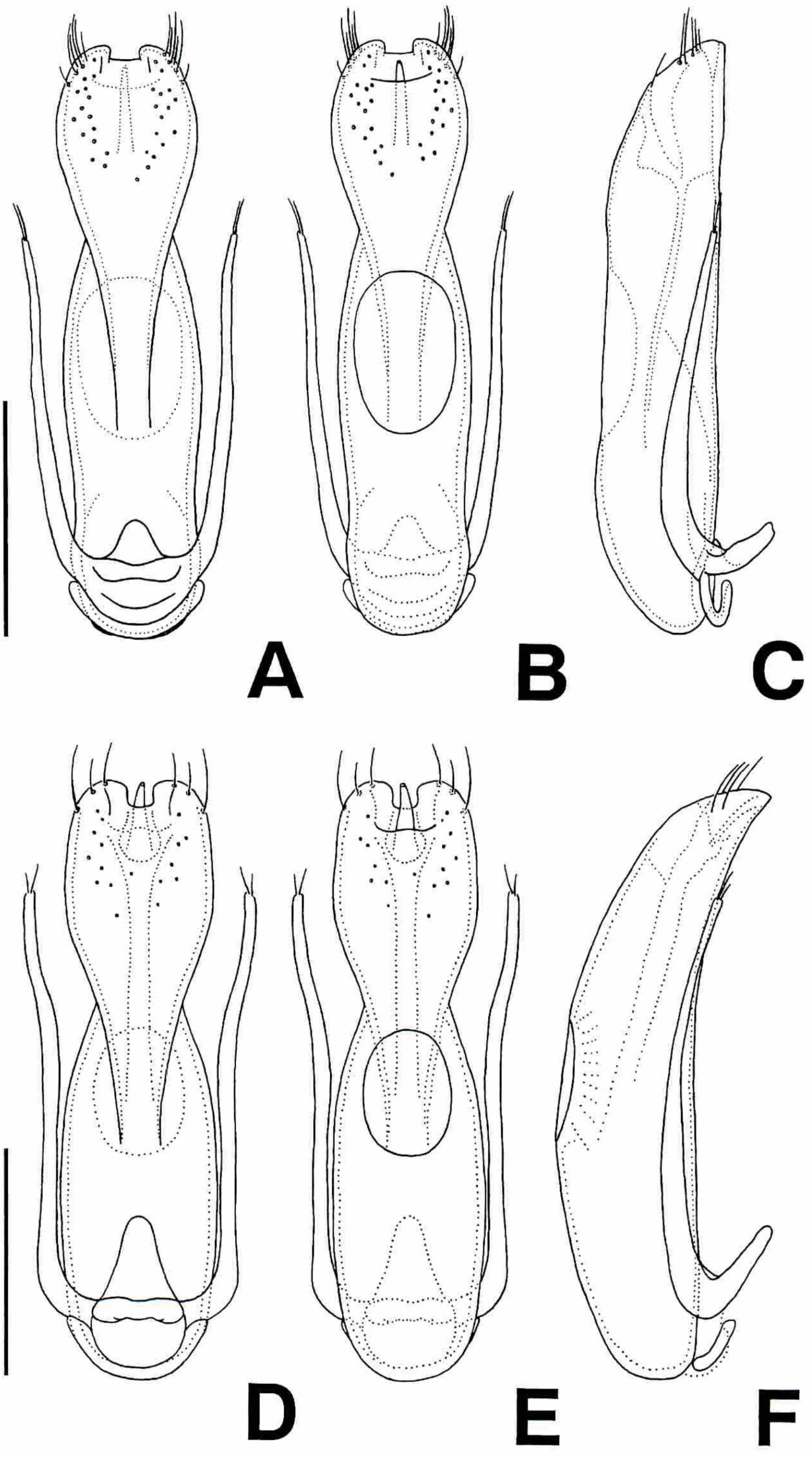


Fig. 14. *Veraphis engelmarki engelmarki* FRANZ (A–C) and *V. engelmarki fatiloquus* KURBATOV (D–F), aedeagus in ventral (A, D), dorsal (B, E) and lateral views (C, F). Scale: 0.1 mm.

V. e. engelmarki.

Male. Similar to the nominotypical subspecies, except for the following characters. Body larger and darker, length 1.53–1.77 mm (mean 1.61 mm); head with grooves variable in shape, in some specimens very similar to those in *V. e. engelmarki*, in other males grooves are shortened and confined to posterior half of head (Fig. 12E), length of head 0.17–0.2 mm (mean 0.19 mm), width 0.29–0.31 mm (mean 0.3 mm); antennae (Fig. 12K) stouter, with antennomeres III–IX about as long as wide and usually slightly transverse antennomere X, length 0.62–0.67 mm (mean 0.66 mm); pronotum in most specimens distinctly broader than long, in some only slightly broader, length 0.31–0.35 mm (mean 0.33 mm), maximum width 0.38–0.42 mm (mean 0.40 mm), width at base 0.36–0.41 mm (mean 0.38 mm); elytra more flat, length 0.80– 0.97 mm (mean 0.87 mm), width 0.52–0.65 mm (mean 0.62 mm), EI 1.49–1.54.

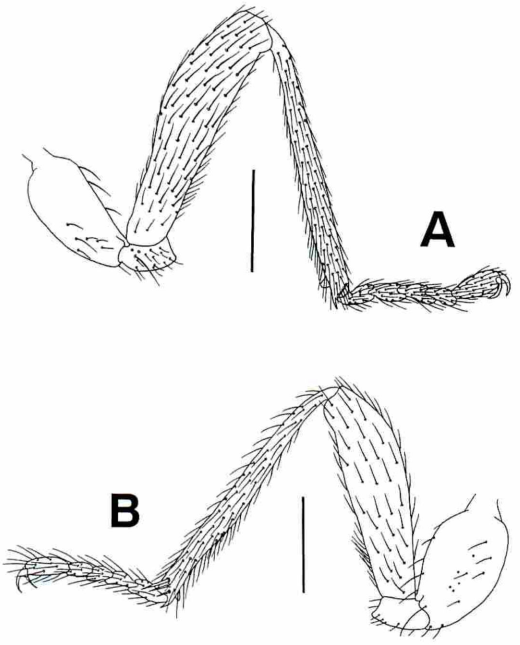


Fig. 15. *Veraphis engelmarki niponensis* subsp. nov. (A) and *V. engelmarki koreanus* subsp. nov. (B); left (A) and right (B) fore leg of male in ventral view. Scale: 0.1 mm.

Pygidium and legs (Fig. 15A) as in *V. e. engelmarki*; metasternum with shallower impression, with lateral margins not raised.

Aedeagus (Figs. 16A–C) 0.27 mm in length, very similar to that of *V. e. fatiloquus* but with much larger dorsal hymenous area.

Female. Unknown.

Distribution. Japan: Hokkaido.

Type series. Holotype: ♂, Mikuni Pass between towns Kamikawa and Horokanai, Hokkaido, 29. VI. 2002, 4–7 P.M., by car netting, S. HORI leg. (NSMT). Paratypes: 6♂♂, same data as the holotype (NSMT, PCPJ, FU).

Etymology. Locotypical, referring to the country name.

Veraphis engelmarki koreanus subsp. nov.

(Figs. 12F, L, 15B, 16D–F)

Diagnosis. This subspecies has large and nearly black body like *V. e. niponensis*; it can be easily distinguished from all other subspecies by very broad aedeagus. Female characters are unknown.

Description. Body of comparable length, coloration and with similar setation as *V. e. niponensis*.

Male. Differs from the nominotypical subspecies in the following characters. Body larger

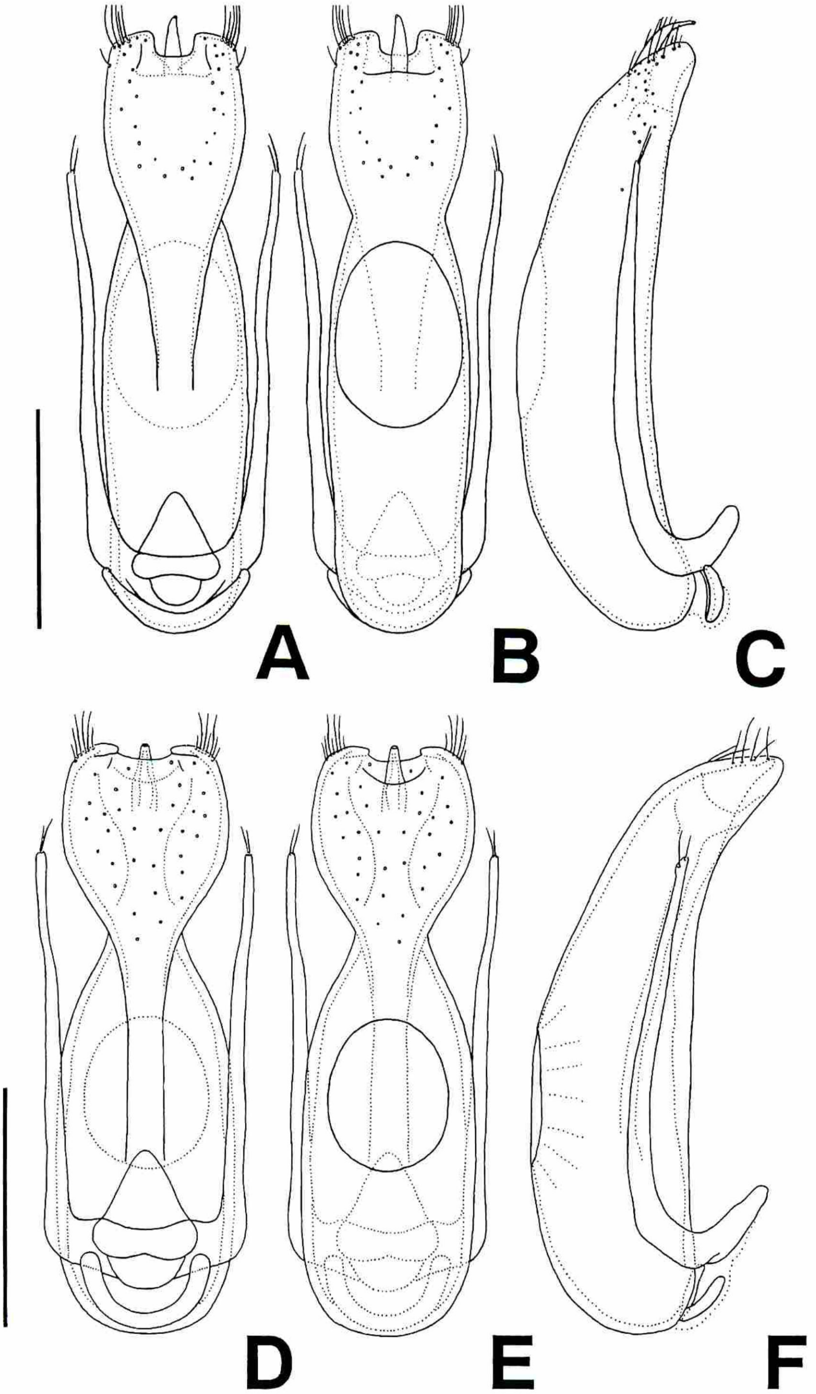


Fig. 16. *Veraphis engelmarki niponensis* subsp. nov. (A–C) and *V. engelmarki koreanus* subsp. nov. (D–F); aedeagus in ventral (A, D), dorsal (B, E) and lateral views (C, F). Scale: 0.1 mm.

and darker, nearly black with light brown appendices, length 1.55–1.68 mm (mean 1.61 mm); head (Fig. 12F) with shorter grooves confined to posterior part of vertex, length of head 0.17–0.20 mm (mean 0.18 mm), width 0.29–0.30 mm (mean 0.295 mm); antenna (Fig. 12L) slightly stouter, length 0.64–0.65 mm (mean 0.645 mm); length of pronotum 0.31–0.37 mm (mean 0.34 mm), maximum width of pronotum 0.39–0.41 mm (mean 0.4 mm), width of pronotum at base 0.36–0.4 mm (mean 0.38 mm); elytra more flat, length 0.87–0.91 mm (mean 0.89 mm), width 0.6–0.66 mm (mean 0.63 mm), EI 1.38–1.45.

Pygidium and fore legs (Fig. 15B) as in *V. e. engelmarki*; metasternum with very long median carina reaching posterior third, posterior median impression slightly shallower than that of the nominotypical subspecies, but deeper than that in *V. e. niponensis*, with slightly raised lateral margins.

Aedeagus (Fig. 16D–F) 0.25 mm in length, most similar to that of *V. e. fatiloquus* and *V. e. niponensis*, but in dorso-ventral view median lobe much broader.

Female. Unknown.

Distribution. North Korea.

Type series. Holotype: ♂, N Korea, Ryanggang Prov., 31 km on Paekdu-san road, NW of Samjiyon, 2,000 m, 28. VI. 1988, with No. 1355, O. MERKL and Gy. SZÉL leg. (HNHM). Paratype: ♂, same data as for the holotype (HNHM).

Etymology. Named after the country of the occurrence.

Remarks. This is the second species of the Scydmaenidae reported from North Korea; so far only *Euconnus lijingkei* FRANZ has been known to occur in this country.

Veraphis ishikawai HISAMATSU

[Japanese name: Higebuto-hirata-kokemushi]

(Figs. 17A, B)

Veraphis ishikawai HISAMATSU, 1985: 13, figs. 15–16; O'KEEFE and LI, 1998: 158.

Diagnosis. This species can be easily distinguished from all other Palearctic congeners by its large body and proportions of antennomeres.

Redescription. Body large, elongate, flat, reddish-brown, narrow adsutural area on elytra slightly darker, tarsi and palpi slightly lighter than body; setation short and sparse, yellowish.

Male. Unknown.

Female (Fig. 17A). Body length 1.73–1.80 mm (mean 1.76 mm). Head widest at relatively small and weakly convex eyes, tempora just behind eyes only slightly narrower, length 0.21–0.23 mm (mean 0.22 mm), width 0.32–0.33 mm (mean 0.325 mm). Tempora rounded, long; vertex with pair of small and shallow but distinct circular pits, each connected posteriorly with shallow groove running toward lateral margin of occipital constriction, sides of vertex between pit and eye convex; frons subtrapezoidal, relatively weakly lowering toward clypeus, slightly convex; supraantennal tubercles indistinct. Punctation very fine and sparse, barely visible; setation sparse, composed of very thin and short suberect setae. Antennae (Fig. 17B) relatively short, length 0.55–0.63 mm (mean 0.59 mm), strongly thickening toward apex, antennomere XI very large, with very large external subapical excavation.

Pronotum slightly wider than long, widest near anterior third, length 0.40–0.44 mm (mean

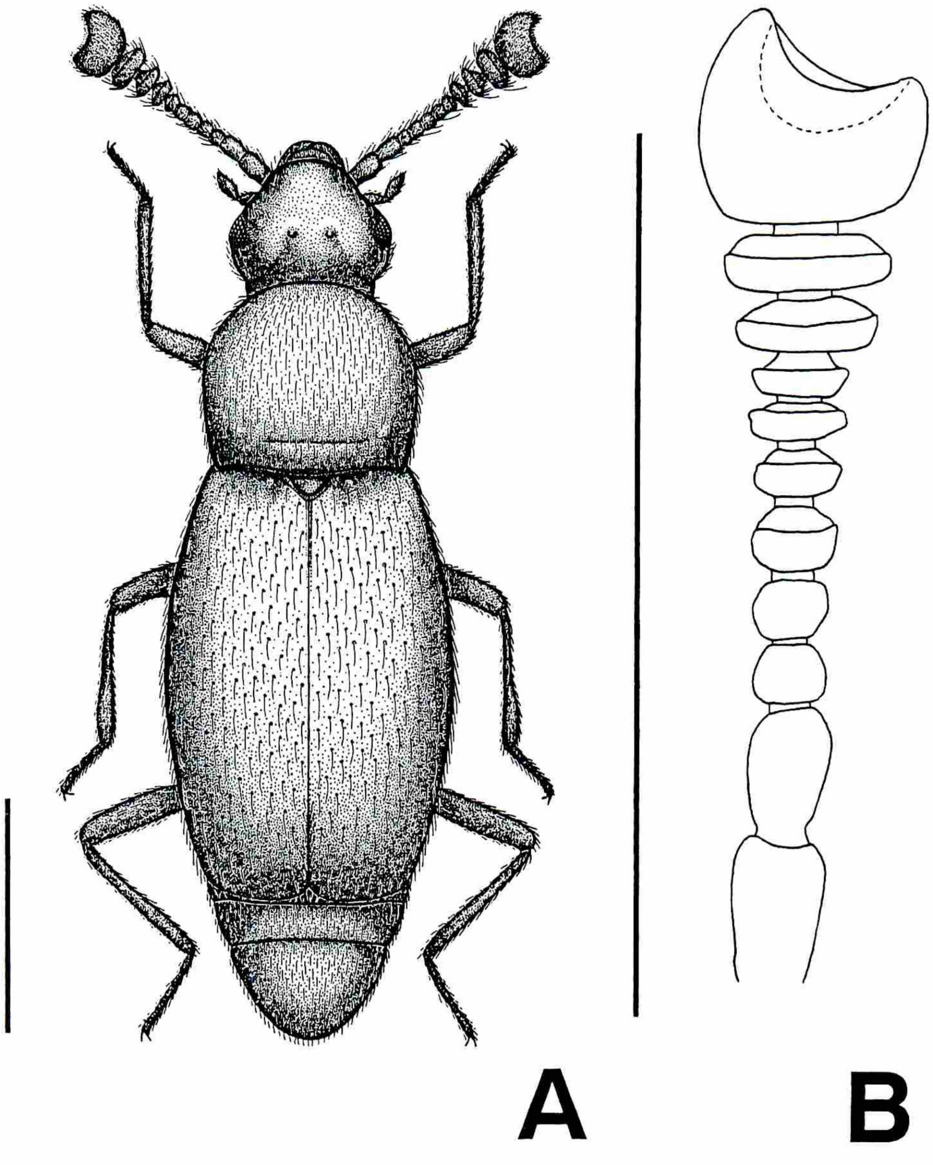


Fig. 17. *Veraphis ishikawai* Hisamatsu; habitus of female (A) and right antenna of female in dorsal view (B). Scale: 0.5 mm.

0.42 mm), maximum width 0.45–0.46 mm (mean 0.455 mm), width at base 0.41 mm. Lateral margins extremely finely serrate in posterior 2/3, slightly narrowing from the widest place toward obtuse hind angles; base slightly arcuate, weakly expanded in middle toward scutellum; ante-basal groove relatively shallow, lateral pits (one near each hind angle) small and shallow; area between each lateral pit and lateral and posterior margin of pronotum near hind angle slightly impressed. Punctation very fine, sparse; setation sparse, composed of very thin, short, suberect setae.

Elytra widest slightly anterior to middle, length 0.90–0.91 mm (mean 0.905 mm), width 0.62–0.64 mm (mean 0.63 mm), EI 1.42–1.45. Humeral callus on each elytron moderately distinct, with shallow and short internal humeral impression; single basal elytral fovea relatively small, located closer to scutellum than to humerus; narrow adscutellar area on elytra raised. Punctation sparse and fine; setation relatively sparse, composed of setae thicker than those on head and pronotum, short and suberect. Hind wings entirely reduced.

Pygidium as long as wide at base, apex broadly rounded, punctation barely noticeable, setation very short, sparse, recumbent to suberect.

Metasternum with very narrow longitudinal median carina in anterior half, distinctly reducing in width toward posterior margin.

Distribution. Japan: Hokkaido.

Materials examined. Holotype: ♀, Mt. Kurodake, Daisetsu Mts., Hokkaido, 8. VII. 1970, K. ISHIKAWA leg. (EU). Additional material studied: ♀, Mt. Midori-dake, Daisetsu Mts., Hokkaido, 1,300–1,400 m, 14. VIII. 2001, H. SUGAYA and M. MARUYAMA leg. (FU).

Acknowledgments

We express our thanks to Dr. Shûhei NOMURA (National Science Museum, Tokyo, Japan), Drs. Nobuo OHBAYASHI and Masahiro SAKAI (Ehime University), Dr. Kôhei SAWADA (Osaka, Japan), Dr. Munetoshi MARUYAMA (National Science Museum, Tokyo, Japan), Mr. Hiroshi SUGAYA (Okinawa Pref.), Mr. Shigehisa HORI (Historical Museum of Hokkaido, Sapporo), Dr. Harald SCHILLHAMMER (Naturhistorisches Museum Wien, Austria), Dr. Ottó MERKL (Hungarian Natural History Museum, Budapest, Hungary) and Dr. Serguei KURBATOV (Moscow, Russia). The first author is greatly indebted to Dr. Stig LUNDBERG (Luleå, Sweden) who collected and provided an additional specimen of the very rare species *Veraphis engelmarki* used in the present study, Dr. Mikael SÖRENSSON (Lund University, Sweden) who kindly sent me rare literature and translated essential parts of faunistic records from the Swedish language, and to numerous Japanese entomologists for helping me in various ways during my stay in Japan.

要　　　約

Paweł JAŁOSZYŃSKI・保科 英人：旧北区産 *Veraphis* 属（和名：ヒラタコケムシ属）の分類学的再検討．———— 本稿では，*Veraphis* 属を再定義するとともに，3つの種群を設け，本属に含まれる種を整理した．

V. japonicus 種群には以下の4種が属する．従来 *Euthia* 属に入れられていた *E. japonica*（ホソヒラタコケムシ）は，その形態的特徴から，*Veraphis* 属 *japonicus* 種群に移された．また，新たに3新種を記載し，それぞれ *V. hisamatsui* sp. nov.（エゾヒラタコケムシ），*V. odaigaharensis* sp. nov.（オオダイヒラタコケムシ），*V. tottoriensis* sp. nov.（サンインヒラタコケムシ）と命名した．

V. sawadai 種群には，*Veraphis sawadai* sp. nov.（ムツヒラタコケムシ），*V. kurbatovi*（ミチノクヒラタコケムシ）の2新種が属する．

V. irkutensis 種群は，既知種 *Veraphis irkutensis* (REITTER) と，1新種 *V. horianus* sp. nov.（アイヌヒラタコケムシ）から構成される．

また，*Veraphis* 属のうち，*V. engelmarki* と *V. ishikawai* の2種は，上記の3つの種群のいず

れにも入れることができないものである．そして，KURBATOV (1995) が極東ロシアから記載した *Veraphis fatiloquus* を *V. engelmarki* の亜種に格下げしたほか，新たに 2 亜種 *V. e. niponensis* subsp. nov.（和名：タイリクヒラタコケムシ）と *V. e. koreanus* subsp. nov. を記載した．その結果，*V. engelmarki* は 4 亜種から構成されることになった．また，*V. ishikawai* の再記載をおこなった．*Veraphis* 属の和名をヒラタコケムシ属と命名したのにともない，*V. ishikawai* の従来の和名であるヒゲブトコケムシを，ヒゲブトヒラタコケムシに改称した．

References

CASEY, T. L., 1897. Coleopterological notices, VII. *Annals of the New York Academy of Science*, **9**: 285–684.

CSIKI, E., 1919. Scydmaenidae, Pars 70 [pp. 1–106]. *In Coleopterorum Catalogus*, Volume **12**. S. SCHENKLING (ed.). W. Junk, Berlin.

FRANZ, H., 1970. Untersuchungen über die paläarktischen Arten der Gattungen *Euthia* STEPH. und *Veraphis* CASEY (Col. Scydmaenidae). *Eos, Revista Española de Entomologĩa*, **46**: 57–84.

HISAMATSU, S., 1985. Notes on some Japanese Coleoptera, I. *Transactions of the Shikoku Entomological Society*, **17**: 5–13.

JAKOBSON, G. G., 1910. Zhuki Rosii i zapadnoy Evropy. Scydmaenidae, pp. 588–596. Part 8: 561–640. A. F. DAVRIENA, St. Peteresburg.

JAŁOSZYŃSKI, P., 2003. Description of *Paeneutheia pallida* gen. et sp. nov. from Borneo, with notes on allied genera of the tribe Eutheiini (Coleoptera, Scydmaenidae). *Bulletin of the National Science Museum, Tokyo, Series A (Zoology)*, **29**: 213–223.

JAŁOSZYŃSKI, P. 2004. Two new species of *Eutheia* STEPHENS (Coleoptera, Scydmaenidae, Scydmaeninae) from Japan. *Bulletin of the National Science Museum, Tokyo, Series A (Zoology)*, **30**: 129–135.

KURBATOV, S. A., 1995. Sur les Euthiini et Cephenniini (Coleoptera, Scydmaenidae) de l'extrême-est de la Russie et du Japon. *Revue suisse de Zoologie*, **102**: 943–959.

LUNDBERG, S., 1972. Catalogus Insectorum Sueciae. XVI. Coleoptera (1969). Additamenta IV. *Entomologisk Tidskrift*, **93**: 169–182.

LUNDBERG, S., 1974. Skalbaggar funna i Messaureområdet, Lule lappmark (Coleoptera). *Entomologisk Tidskrift*, **95**: 85–94.

LUNDBERG, S., 1975 (1974). Skalbaggar (Coleoptera) i Messaureområdet. [in:] ENCKELL, P.H. [ed.], Grundvattenfaunan i Lule älvs vattenområde. Norbottens Natur, Småskrift nr 1, 1975 (1974), pp. 13–36.

LUNDBERG, S., 1988. Catalogus Insectorum Sueciae 1986 - rättelser och tillägg. *Entomologisk Tidskrift*, **109**: 81–85.

LUNDBERG, S., 1989. Sällsynta skalbaggar från gammal granskog i Blåkölen-reservatet i Norrbotten. *Entomologisk Tidskrift*, **110**: 139–144.

LUNDBERG, S., 1994. Catalogus Insectorum Sueciae 1986 - tillägg 3. *Entomologisk Tidskrift*, **115**: 119–125.

LUNDBERG, S., 2001. Skalbaggsfaunan i Blåkölen-reservatet i Norrbotten. *Natur i Norr*, **20**: 97–105.

NEWTON, A. F. and H., FRANZ, 1998. World catalog of the genera of Scydmaenidae (Coleoptera). *Koleopterologische Rundschau*, **68**: 137–165.

O'KEEFE, S. T. and J. K., LI, 1998. Review of the Scydmaenidae (Coleoptera) of eastern Asia, with particular reference to *Scydmaenus*, and description of the first scydmaenid from Hainan Island, China. *Journal of the New York Entomological Society*, **106**: 150–162.

PETTERSSON, R. B., 1992. Skalbaggar från fjällnära barrskog vid Njakafjäll, Äsele lappmark. *Natur i Norr*, **11**: 109–112.

PETTERSSON, R. B. and S., LUNDBERG. 1993. Skalbaggsfaunan inom Björnlandets Nationalpark. *Natur i Norr*, **12**: 26–36.

REITTER, E., 1896. Dreizehnter Beitrag zur Coleopteren-Fauna des russischen Reiches. *Wiener Entomologische Zeitung*, **15**: 64–77.

(Received January 28, 2005; Accepted June 3, 2005)

Ent. Rev. Japan, **60** (2): 137–152, October 31, 2005

Notes on Chinese *Dianous* LEACH (Coleoptera: Staphylinidae)*

Volker PUTHZ

c/o Limnologische Fluss-Station, MPI-Limnologie
Damenweg 1, D-36110 Schlitz, Germany

Abstract Seven new species of the genus *Dianous* LEACH are described from China and Taiwan: *Dianous fellowesi* sp. nov. (Guangxi), *D. kishimotoi* sp. nov (Sichuan), *D. lieni* sp. nov. (Taiwan), *D. rimosipennis* sp. nov. (Yunnan), *D. schuelkei* sp. nov. (Hubei), *D. shibataianus* sp. nov. (Taiwan), *D. vorticipennis* sp. nov. (Yunnan), eight *Dianous*-species are recorded for the first time from China, 1 from Myanmar, 1 from Nepal and 1 from Vietnam. A new species-complex of *Dianous* is established and a lectotype for *D. ocellatus* CAMERON is designated.

Through the kindness of Drs. Toshio KISHIMOTO and Yasutoshi SHIBATA, I got a number of specimens of *Dianous* LEACH from China and Taiwan for identification. Amongst them there were found 5 new species and a number of already described species which are new to China. I also include two new species and new records on the materials from various collectors and institutions. My thanks are due to the colleagues named above and to all other collectors and institutions, especially to Michael SCHÜLKE and to my dear friend Guillaume de ROUGEMONT, who continuously provided me with new collections. To facilitate the identification of the new records I refer to my study "The *Dianous* LEACH in China" (PUTHZ, 2000) and the key provided there.

Seventy-eight species of the genus *Dianous* have been known from China in 2000, most abundant in Sichuan (30), but now the total number is increased to 93, of which 36 species are from Yunnan and 31 species from Sichuan.

Abbreviations: acam = antecoxal area of metasternum; alS = apicolateral setae of parameres; amS = apicomedial setae of parameres; asacl = apically spinulose arcuate cuticular laminae; dE: distance between eyes; HT = Holotype; lE: length of eyes; lEl = greatest length of elytra; lP = length of pronotum; lS = length of suture; lT: length of temples; PM = proportional measurements; PT = Paratype; wEl = greatest width of elytra; wH = width of head; wP = width of pronotum.

FMCh = Field Museum of Natural History, Chicago;
NHML = The Natural History Museum, London;
NHMW = Naturhistorisches Museum, Wien;
cP = coll. Puthz.

---

* 287th Contribution to the knowledge of Steninae.

Dianous shibataianus sp. nov.

(Figs. 1, 4, 5)

This new species belongs to the complex of *Dianous aereus-andrewesi* (PUTHZ, 2000: 424) and resembles *D. rugipennis* PUTHZ. Its sister-species is *D. lieni* sp. nov., which is described below.

Black with a plumbeous or slightly greenish tint, shining, head and pronotum coarsely and densely punctate, sculpture of elytra very coarse and dense, vorticose, abdomen very finely and sparsely punctate; pubescence inconspicuous, recumbent. Antennae black, club dark brown. Segment 1 of maxillary palpi brownish, segments 2 and 3 dark brown. Trochanters brown, legs black, tarsi dark brown. Clypeus and labrum black with some bluish tint, sparsely pubescent. Segment 4 of metatarsi simple, shortly bilobed in meso- and protarsi.

Length: 5.0–6.5 mm (fore parts: 3.0–3.2 mm).

PM of HT and of 2♀♀–PT: wh: 47 (50.5/49), dE: 28 (31/30); lE: 22 (23/23); lT: 6 (8/8); wP: 33 (35/35); lP: 37 (41/38); wEl: 46 (52/49); lEl: 51 (56/51); lS: 43 (46/43).

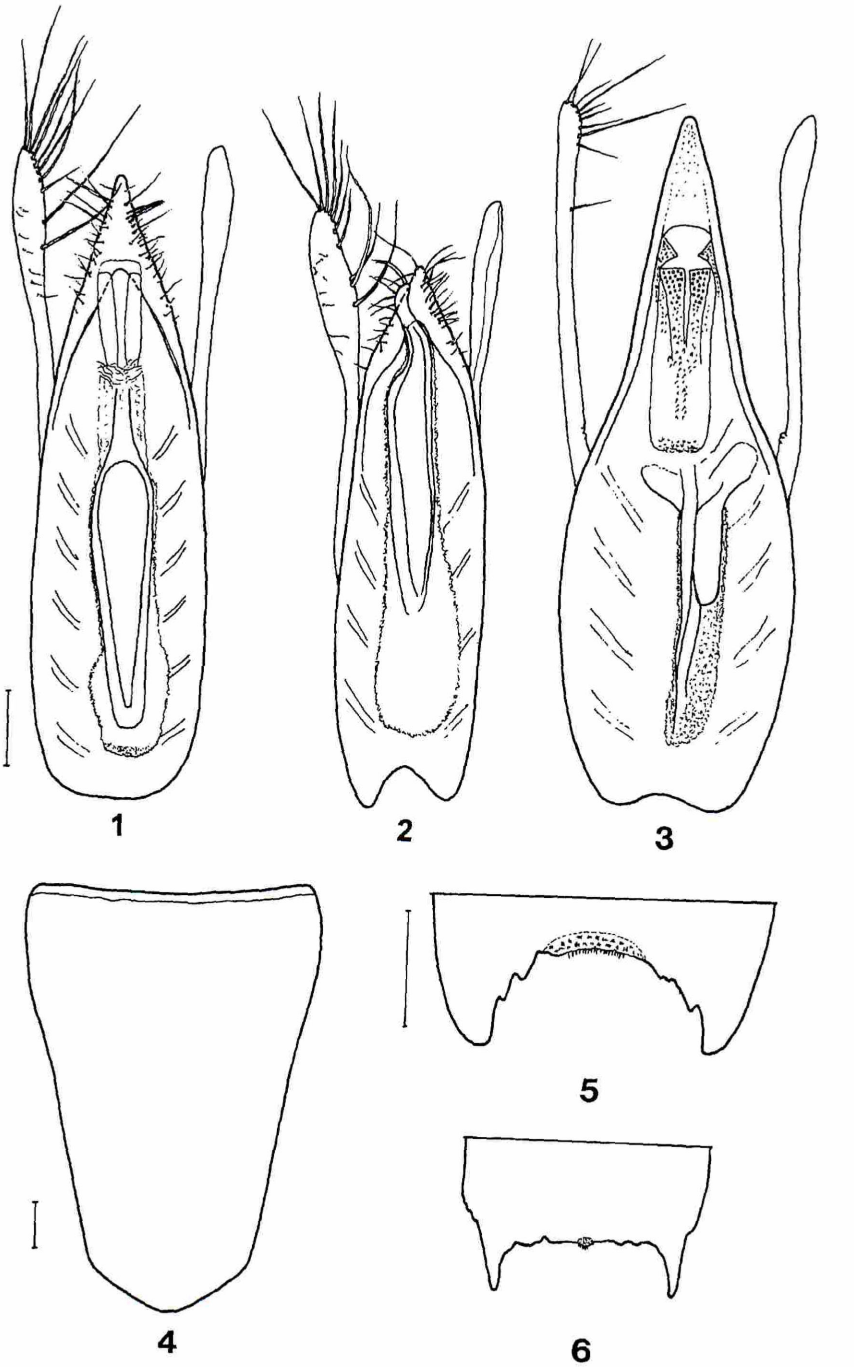
Male. Metasternum broadly convex with some coarse, scattered punctures, interstices densely microsculptured medially, smooth laterally, acam smooth. Sternites 3-6 finely and very sparsely punctate, sternite 7 with a very shallow median impression, which is finely and moderately densely punctate, posterior margin very shallowly emarginate. Sternite 8 with a broad apical emargination in about posterior seventh. Sternite 9 with a moderately long, broad, curved tooth apicolaterally and a small area of asacl (Fig. 5), apical brush moderately strong, about 2/3 as long as the sternite. Tergite 10 broadly rounded. Aedeagus (Fig. 1), median lobe triangularly narrowed, apical portion densely set with numerous setae. Parameres longer than the median lobe with 7 alS and 10 amS.

Female. Metasternum about as in the male but interstices smooth. Sternites 3–6 as in the male, sternite 7 denser punctate posteriomedially. Sternite 8 (Fig. 4). Valvifer acute apicolaterally, apical brush distinct, nearly as long as the valvifer. Tergite 10 broadly triangular.

Head slightly broader, as broad as or slightly narrower than elytra, longitudinal furrows of frons long and deep, median portion about as broad as each of the side portions, nearly as elevated as the posterior portion of the side portions; punctation coarse and dense, diameters of punctures as large as basal cross section of antennal segment 3, interstices mostly about as large as half diameter of punctures, can be larger near posterior eye-margins and on median portion. Antennae long, when reflexed the last 2 segments extending beyond the posterior margin of pronotum, penultimate segments about 1/3 longer than broad.

Pronotum longer than broad, broadest in about midldle, strongly constricted anteriorly and strongly concave posteriorly; a deep transverse impression just behind anterior margin, deep oblique, medially triangularly confluent lateral impressions in posterior half, where two lateral swellings can be seen; punctation as coarse as on head or slightly coarser, dense, confluent on posterior third, interstices mostly slightly smaller than half diameter of punctures, becoming somewhat larger somewhere on actual middle and on posterolateral swellings.

Elytra longer than broad, subquadrate, sutural and humeral impressions distinct; sculpture very coarse and long-confluent on medial two thirds, a vertex can be formed just behind the middle on lateral third, punctation only distinctly delimited at shoulders and on posteriolateral half and near posterior margin laterally, where the punctation becomes much finer and much sparser making these areas strongly shining.



Figs. 1–6. Ventral aspect of aedeagus (1–3), sternite 8 of female (4), posterior portion of sternite 9 of male (5, 6) of *Dianous shibataianus* sp. nov. (1, 4, 5, paratypes), *D. lieni* sp. nov. (2, holotype), *D. rimosipennis* sp. nov. (3, 6, holotype). Scale = 0.1 mm.

Abdomen relatively convex, paratergites declining in male, paratergites 4 as broad as metatibiae at base, horizontal in female, where paratergites 4 are slightly broader than in male; punctation of paratergites fine and dense anteriorly, fine and sparse posteriorly; basal furrows of first tergites very deep, tergite 7 with a distinct membranous fringe apically (the species is fully winged); punctation very fine and very sparse throughout, punctures on tergite 3 nearly as one medial eye-facet, those on tergite 7 distinctly smaller, interstices 3x or 4x as large as punctures; tergite 10 with few fine scattered punctures.

Legs slender, metatarsi more than 2/3 of the length of metatibiae (42:57), first segment distinctly shorter than the three following segments combined, distinctly longer than the last segment (HT: 15–(16)–12), segment 4 of metatarsi simple.

Fore parts lacking microsculpture, very shallow reticulation on last tergites, more distinct on tergites 9 and 10.

Holotype ♂ and 1♂, 3♀♀–paratypes: Taiwan, Hualien-Hsien: near Tzeen, 2,000 m, 11. VIII. 1977, Y. SHIBATA leg. HT in Tokyo University of Agriculture and PT in coll. SHIBATA, PT also in cP.

Discussion. Dianous shibataianus is distinguished from *D. lieni* sp. nov. by the much finer and sparser abdominal punctation, less conspicuously vorticose sculpture and denser punctation on lateral portions of elytra, and the broader head. From *D. rugipennis* PUTHZ it is distinguished by the longer elytra, sparser abdominal punctation and more distinctly although shortly bilobed segment 4 of meso- and protarsi. In my key the new species should be placed at # 52 or at # 194.

The new species is named in honour of its esteemed collector, Dr. Y. SHIBATA.

Dianous lieni sp. nov.

(Fig. 2)

This new species is the sister species of *D. shibataianus*. Because of strong similarities a full description is not necessary, a detailed comparison will be sufficient.

Black with a slight greenish tint, moderately shining, head and pronotum coarsely and very densely punctate, ± coalescent on pronotum, sculpture of elytra very coarse and dense, vorticose, abdomen moderately finely and moderately densely punctate; pubescence inconspicuous, recumbent. Antennae black or dark brown, club lighter. First segment of maxiallary palpi and base of segment 2 yellowish, rest brown. Trochanters dark brown, legs black or dark brown, tarsi brownish. Clypeus and labrum black, sparsely pubescent. Segment 4 of metatarsi nearly simple (indistinctly bilobed), segments 4 of meso- and protarsi shortly bilobed.

Length: 4.8–6.2 mm (fore parts: 2.8–3.0 mm).

PM of the HT and of both PT: wH: 43 (45.5/46.5); dE: 25 (27/27.5); lE: 21 (22/22); lT: 5 (6/6); wP: 33 (33/34); lP: 36 (38.5/38); wEl: 47 (49/51); lEl: 51 (52/53); lS: 42 (43/44.5).

Male. Metasternum broadly convex, coarsely and moderately densely punctate medially except a longitudinal impunctate area on actual middle, punctures slightly smaller than basal cross section of antennal segment 3, interstices smaller than diameter of punctures, reticulation present only on actual middle, acam smooth. Sternites 3–6 moderately finely and sparsely punctate, sternite 7 with a shallow finely and densely punctate and pubescent impression posteriomedially, posterior margin very shallowly emarginate. Sternite 8 with a broad triangular emargination in about posterior sixth. Sternite 9 as in *D. shibataianus*. Tergite 10 very broadly rounded. Aedeagus (Fig. 2), apical portion of median lobe broader than in *D. shibataianus*, parameres with 9–10 alS and 10–11 amS.

Female. As in *D. shibataianus*, but the ventral punctation coarser and denser. Tergite 10 broadly rounded.

Head smaller than in *D. shibataianus*, structure of frons similar but the punctation slightly coarser and denser. Antennae as in the compared species. Pronotum as in *D. shibataianus* but the sculpture coarser and more confluent at places, diameter of punctures as large as apical cross section of antennal segment 3, interstices distinctly smaller than half diameter of punctures. Elytra of the same structures as in the compared species but rugae in average shorter, posterolateral punctation also distinctly delimited and sparser but not as conspicuouly sparse as in *D. shibataianus*. The most remarkable difference can be seen on the abdomen: punctation on tergite 3 moderately fine and dense laterally, sparser medially, diameter of punctures slightly larger than medial eye-facets, interstices distinctly smaller than punctures laterally; the punctation becomes slightly finer and somewhat sparser posteriorly, interstices on tergite 7 at most 2x as large as punctures.

Holotype: ♂, Taiwan, Taipei-Hsien: near Shihfing, 4. V. 1977, J. C. LIEN leg.; 1 ♂, 3 ♀♀–paratypes: ibidem, 17. III. 1977, J. C. LIEN leg.; 1 ♀–paratype: Chiai Hsien: Fenchihu, 1,400 m, 7. VIII. 1977, Y. SHIBATA leg. HT in Tokyo University of Agriculture and PT in coll. SHIBATA, PT also in cP.

Discussion. In my key *Dianous lieni* has to be placed at # 194; it is distinguished from *D. rugipennis* PUTHZ by the longer antennae, the coarser and much denser punctation of head and pronotum, by the coarser abdominal punctation and by the sexual characters.

The new species is named after its collector, Mr. J. C. LIEN.

Dianous rimosipennis sp. nov.

(Figs. 3, 6, 11)

This new species belongs to the complex of *D. luteoguttatus* CHAMPION (see below) and is the sister species of the named species.

Black, moderately shining, elytra with large orange spots, head moderately finely, densely punctate, pronotum with a coarse tortuous sculpture, elytra coarsely rimose longitudinally, tortuous on the spots, abdomen very finely and densely punctate; pubescence of fore parts indistinct, that of abdomen dense, recumbent. Antennae black, club dark brown. Maxillary palpi dark brown, segment 1 slightly less dark. Legs black, tarsi blackish brown. Clypeus and labrum black, moderately densely pubescent. Tarsal segment 4 simple but asymmetric with a lateral lobe and a distinct tarsal shoe (Fig. 11).

Length: 6.0–7.0 mm (fore parts 3.3 mm).

PM of the HT: wH: 50; dE: 30; lE: 22; lT: 8; wP: 36; lP: 39; wEl: 59; lEl: 61; lS: 52.

Male. Metasternum convex, middle of median area narrowly impressed longitudinally, laterally the median area rather finely and moderately densely punctate, punctures distinctly smaller than basal cross section of segment 3 of maxillary palpi, shallowly reticulated interstices larger than punctures but less large than 2 punctures combined, mcl very finely and densely punctate. Medial punctation of sternite 3–6 fine and rather dense but sparser than lateral punctation.

Sternite 7 with a shallow impression posteromedially, which is very finely and densely punctate and pubescent, posterior margin shallowly emarginate. Sternite 8 with a broad triangular exmargination in posterior sixth. Sternite 9 with a prominent tooth apicolaterally (Fig. 6), apical brush slightly less long than the sternite. Tergite 10 broadly rounded. Aedeagus (Fig. 3), parameres with a small knotty area basally.

Female. Unknown.

Head broad but distinctly narrower than elytra, longitudinal furrows of frons distinct, median portion as broad as each of the side portions, situated deeply below the level of inner eye margins, nearly flat anteriorly, distinctly but not strongly convex posteriorly. Punctation moderately fine and dense, diameter of punctures slightly larger than medial eye facets, interstices distinctly smaller than punctures, no smooth areas, also the antennal tubercles punctate. Antennae very long, when reflexed more than the last 3 segments well extending beyond the posterior margin of pronotum, penultimate segments twice as long as broad.

Pronotum longer than broad, broadest in the middle, sides convex towards anterior margin, distinctly concave behind. A deep transverse furrow anteriorly, deep lateral impressions lateromedially, shallow lateral impressions posteriorly; sculpture consisting of completely tortuous long sulci, interstices sharp, much smaller than half a sulcus, slightly larger on actual middle.

Elytra very large, subquadrate, sides moderately rounded, posterior margin deeply emarginate; sutural and humeral impressions distinct, orange spots somewhat elevated. The very coarse and very dense sculpture consisting preponderately of very long mainly longitudinal sulci (which look like fissures), direction of the fissures oblique on humeral area and behind orange spots posteriorly, tortuous around and on spots, of which the middle has some coarse, ± delimited punctures; declining sides of elytra coarsely and very densely punctate; interstices between sulci sharp and mostly very narrow, can become as large as one sulcus on a small area between sutural and humeral impressions. The slightly oval elytral spot about as long as antennal segment 3.

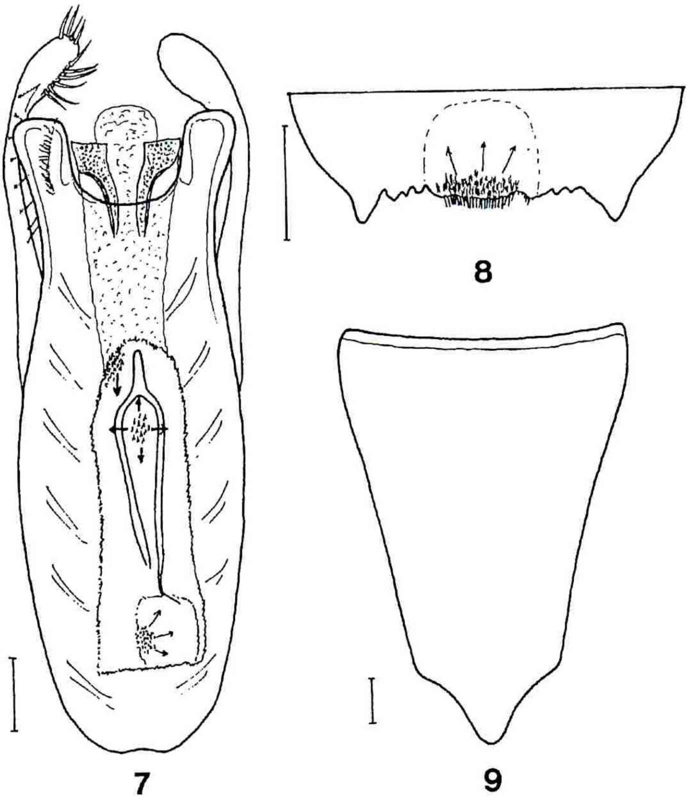
Abdomen broad, horizontal paratergites broad, those of tergite 4 as broad as medial cross section of metatiba, very finely and very densely punctate; basal furrows of tergites deep, tergite 7 with a broad membranous fringe apically (the species fully winged). Punctation throughout very fine and dense, punctures distinctly smaller than medial eye-facets, interstices 1 x to 2 x as large as punctures, tergite 10 with some scattered punctures.

Legs slender, metatarsi nearly 3/4 as long as metatibae, segment 1 slightly shorter than the 3 following combined, slightly shorter than the last segment; lateral lobe of asymmetric tarsal segment 4 with a long, moderately broad tarsal shoe (Fig. 11).

Elytra with a very fine longitudinally rimose microsculpture, abdomen with a very shallow groundsculpture.

Holotype: ♂, Yunnan, Gaoligong Shan, 2,200–2,500 m, 24°57'N, 98°45'E, 8–16. V. 1995, S. SEMELA leg. HT in Tokyo University of Agriculture.

Discussion. *Dianous rimosipennis* – nomen est omen – is easily distinguished from *D. cruentatus* L. BENICK by the black legs and much finer punctation of frons, from *D. luteoguttatus* CHAMPION by the larger elytral spot and the aedeagus. In my key the new species has to be placed at # 159, the same has to be done with *D. luteoguttatus*, which formerly was erroneously placed in that key.



Figs. 7–9. *Dianous kishimotoi* sp. nov.: Ventral aspect of aedeagus (1), posterior portion of sternite 8 of male (8), sternite 8 of female (9) (paratypes). Scale = 0.1 mm.

Couplet 159 (186) should now be read as follows:

a (f) Middle portion of frons slightly elevated, deeply situated below level of inner eye margins.

b (c) Basal half of femora reddish. Punctation of frons coarse and dense, diameter of punctures as large as basal cross section of antennal segment 5. 5.8–6.8 mm. .... *D. cruentatus* L. BENICK (Burma; China: Yunnan)

c (b) Legs completely black, punctation of frons moderately fine and dense, diameter of punctures slightly larger than medial eye facets.

d (e) Elytral spot smaller, much shorter than the length of antennal segment 3. Male: median lobe narrower, parameres shorter than median lobe. 6.0–7.0 mm. .... *D. luteoguttatus* CHAMPION (India; Nepal; Taiwan)

e (d) Elytral spot larger, about as long as antennal segment 3. Male: median lobe broader, parameres slightly longer than median lobe. 6.0–7.0 mm. .... *D. rimosipennis* sp. nov. (China: Yunnan)

f (a) Middle of frons distinctly elevated, extending to or beyond the level of inner eye margins.

Dianous vorticipennis sp. nov.

(Fig. 10)

This new species belongs to the complex of *Dianous luteoguttatus* (see below) and resembles habitually *D. andrewesi* CAMERON.

Black, fore parts with very faint greenish tint, moderately shining, head moderately coarsely and moderately densely punctate, pronotum coarsely, densely, and rugosely sculptured, elytra coarsely and densely rugose with a complete rosetta on posterior half (Fig. 10), abdomen very finely and very densely punctate; pubescence of fore parts indistinct, that of the abdomen dense and recumbent. Antennae black, club brownish. Maxillary palpi blackish brown, segment 1 slightly lighter. Trochanters dark brown, legs black, tarsi brown. Clypeus and labrum black, sparsely pubescent. Segment 4 of tarsi simple.

Length: 5.5–6.5 mm (fore parts: 3.0–3.1 mm).

PM of the HT: wH: 52.5; dE: 30; lE: 25; lT: 8; wP: 35; lP: 38; wEl: 45.5; lEl: 53; lS: 46.

Male. Unknown.

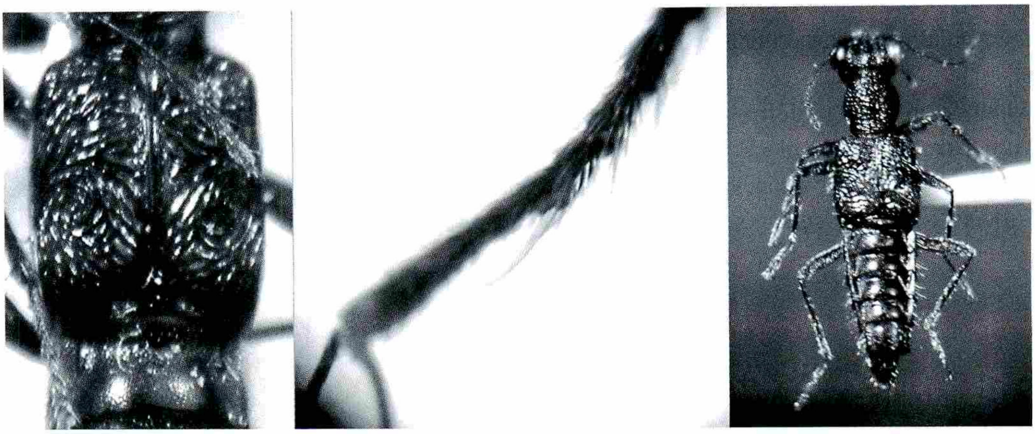
Female. Metasternum slightly convex, median area coarsely and sparsely punctate, diameter of punctures as large as basal cross section of segment 2 of the maxillary palpi, reticulate interstices 2x and more as large as punctures, mcl with few fine punctures. Median punctation of sternite 3–6 moderately fine, sparse, punctures nearly as large as medial eye-facets, interstices 2x, 3x or more as large as punctures. Sternite 7 finer and denser, very densely punctate and pubescent posteriomedially; sternite 8 very broadly rounded. Valvifer with a long apical tooth, brush as long as the valvifer. Tergite 10 broadly rounded.

Head much broader than elytra; frons broad; longitudinal furrows distinct in posterior half, median portion as broad as each of the side portions, situated deeply below the level of inner eye margins, flat anteriorly, moderately convex posteriorly. Punctation moderately coarse and moderately dense, diameter of punctures about as large as basal cross section of antennal segment 8, interstices mostly smaller than diameter of punctures, larger on a small area near inner eye margins posteriorly (this area is about as large as 3 punctures combined). Antennae very slender, when reflexed more than the last 4 segments extending beyond the posterior margin of pronotum, penultimate segments nearly 3x as long as broad.

Pronotum longer than broad, broadest in the middle, moderately convexely constricted anteriorly, distinctly concave posteriorly. Several deep impressions: a transverse impression anteriorly, two deep ones lateromedially, a longitudinal median impression in about middle, two impressions posterolaterally. Sculpture coarse and rough consisting of long vorticose rugae, some delimited punctures only on actual middle, interstices sharp and very narrow, only on median impression as large as 2–3 punctures combined.

Elytra subquadrate, distinctly longer than broad, sides nearly straight, posterior margin deeply emarginate; sutural and humeral impressions distinct. Sculpture very coarse and except on a narrow area near posterior margin and posterolaterally strongly sulcate and vorticose; just behind the middle there is a complete rosetta, of which the diameter is about as large as the last 2 antennal segments combined, smooth or sparsely punctate areas posteromedially, near posterior margin and posterolaterally.

Abdomen broad, horizontal paratergites broad, those of tergite 4 nearly as broad as apical cross section of metatibia, basal furrows of tergites deep, tergite 7 with a broad membranous fringe posteriorly (the species is fully winged). Punctation throughout very fine and dense, as in


10 11 12

Figs. 10–12. Elytra and base of abdomen of *Dianous vorticipennis* sp. nov. (10, holotype), metatarsus with tarsal shoe of *D. rimosipennis* sp. nov. (11, holotype), *D. atrocyaneus* PUTHZ (Taiwan: near Juisui) (12).

D. rimosipennis (see above).

Legs slender, metatarsi more than 5/6 the length of metatibiae, segment 1 much longer than the 3 following segments combined and also than the last segment; segment 4 simple with long apical setae but no distinct tarsal shoe.

No distinct microsculpture on elytral rugae, which nevertheless are not completely smooth. Abdomen with very shallow groundsculpture.

Holotype: ♀, Yunnan, Gaoligang Shan, 2,200–2,500 m, 24°57'N, 98°45'E, 8–16. V. 1995, O. SEMELA leg. HT in Tokyo University of Agriculture.

Discussion. Dianous vorticipennis – nomen est omen – is easily distinguished from all its close relatives by the peculiar structure of frons, very long antennae, broad head and the complete elytral rosetta. In my key it has to be placed at # 34. It is distinguished from *D. andrewesi* CAMERON by the much broader head with flat anterior middle portion, by the coarser elytral sculpture and by the long apicolateral tooth of sternum 9.

Remarks on the *luteoguttatus*-complex, defined herewith

This complex of species belongs to group II of the genus (PUTHZ, 1981, 2000). Only 2 species of 4, now, of this complex have been already known but were erroneously put into the *lobigerus*-complex, with which they share their peculiar shape of sternum 9. Although the known specimens of all four species are few, the 2 new species, described above, convinced me to define a new separate complex, which is preliminarily characterized as follows:

The *luteoguttatus*-complex: Large eyes, temples less than half the length of eye, frons concave, median portion flat to slightly elevated, deeply situated below the inner eye margins, antennae very long, when reflexed much extending beyond the posterior margin of pronotum, tarsal segment 4 simple, slightly asymmetrical, with a distinct moderately broad tarsal shoe or with long setae, sternum 9 with a long, somewhat mediad moved apicolateral tooth and very few spinulose arcuate cuticular laminae apicomedially. Male: Median lobe of aedeagus triangular, internal structure consisting of a broad tube, which is enlarged distally; parameres simple with one group of uniform setae. Female: Sternite 8 broadly rounded. Sculpture: coarse, rugose/vorticose. Coloration black, some species have elytral spots.

The following 4 species belong to this complex: *D. cruentatus* L. BENICK, *D. luteoguttatus* CHAMPION, *D. rimosipennis* sp. nov., *D. vorticipennis* sp. nov.

Dianous kishimotoi sp. nov.

(Figs. 7–9)

This new species is the sister species of *D. chinensis* BERNHAUER and resembles it closely. The main differences are found in the aedeagus.

Moderately shining, dark blue-metallic, elytra each with a large orange spot, its diameter about as large as the length of antennal segment 3. Head and pronotum coarsely and moderately densely punctate, elytral punctation coarse and dense, individual punctures well delimited, abdomen finely and densely punctate; pubescence remarkably dense, whitish yellow, long and semierect, pronotal setae as long or slightly longer than antennal segment 2. Antennae, maxillary palpi and legs blackish blue. Clypeus and labrum blue, moderately densely set with very long setae. Segment 4 of metatarsi distinctly bilobed, lobes very short.

Length: 4.6–5.5 mm (fore parts: 3.0–3.1 mm).

PM of the HT: wh: 42; dE: 25; lE: 17; lT: 4; wP: 32; lP: 35; wEl: 51; lEl: 55; lS: 47.

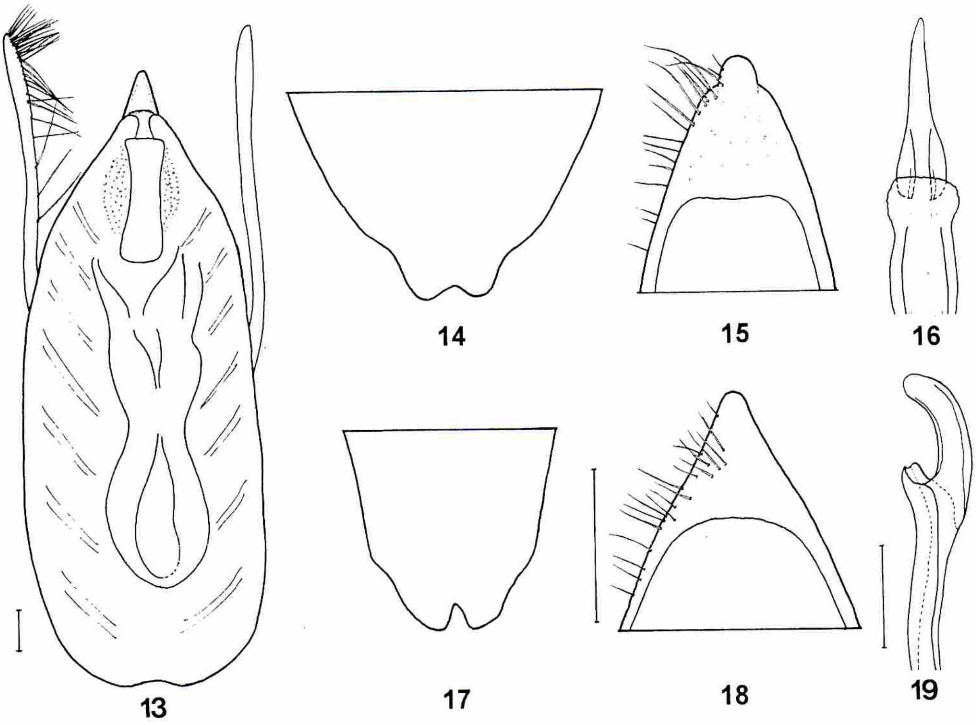
Male. Metasternum broadly convex, medial area coarsely and very densely punctate, interstices reticulate, posterior middle with a narrow triangular impunctate area, acam finely and moderately densely punctate throughout. Punctation of sternites fine and moderately dense, sternite 7 broadly impressed and very densely punctate and pubescent on posterior third. Sternite 8 with a broad apical emargination nearly in posterior quarter. Sternite 9 (Fig. 8), acute apicolaterally with dense sclerotized fringes and asacl apicomedially, brush strong, nearly as long as the sternite. Tergite 10 broadly rounded. Aedeagus (Fig. 7), apical lobes of the median lobe relatively slender with 16–24 ventral setae each, ratio of breadth of median lobe at bottom of apical emargination : depth of apical emargination = 1.6–2.1. Parameres with spoonlike enlarged apical portion distinctly extending beyond the apex of median lobe, with 8–12 als and 10–11 aml.

Female. Ventral characters same as in the male but sternite 7 not impressed. Sternit 8 (Fig. 9). Tergite 10 rounded with a small medial projection.

Holotype ♂ and 4♂♂, 6♀♀–paratypes: Sichuan: Juizhaigon Xian, Heyezhai, Shuzenggou, 2,100 m, 30. VII. 1988, T. KISHIMOTO leg. HT in the National Science Museum (Nat. Hist.), Tokyo, and PT in coll. KISHIMOTO and in cP.

Discussion. This new species is distinguished from *D. chinensis* BERNHAUER by the aedeagus: the apicolateral lobes of the median lobe are narrower, the apical emargination broader, the parameres are longer, and the number of ventral setae of the apical lobes is less (in *D. chinensis* 29–34). *D. chinensis* was described from Shandong and recorded from Jiangxi, Hunan and Shaanxi. It cannot be excluded that the new species may represent a marginal population of *D. chinensis*, but in the present state of knowledge it should be regarded as *species propria*.

The new species is named in honour of its collector, Dr. Toshio KISHIMOTO, Tokyo.



Figs. 13–19. Ventral aspect of aedeagus (13), posterior portion of sternite 8 of female (14, 17), apical portion of median lobe (15, 18), distal portion of internal tube of median lobe (16, 19) of *Dianous schuelkei* sp. nov. (13, 14, holotype and paratype), *D. ocellatus* CAMERON (15, 16, Nokrek N. P.), *D. yunnanensis* PUTHZ (17, paratype), *D. acutus* ZHENG (18: Naga Hills, 19: Xishuangbanna). Scale = 0.1 mm (13 = 14 = 17, 18 = 15, 19 = 16).

Dianous schuelkei sp. nov.

(Figs. 13, 14)

This new species is the sister species of *D. yunnanensis* PUTHZ.

Prussian blue-metallic, moderately shining, punctation of the fore parts dense, that of head and elytra moderately fine, that of pronotum fine, abdominal punctation fine and dense; pubescence pale, short, dense, recumbent, elytra with curved bands of denser pubescence. Antennae, maxillary palpi and legs blue-metallic, last antennal segment segment blackish-brown. Clypeus and labrum blue-metallic, densely pubescent. Segment 4 of metatarsi simple, with a moderately strong tarsal shoe.

Length: 7.0–8.0 mm (fore parts: 3.8–4.2 mm.)

PM of the HT: wH: 57.5; dE: 38; lE: 20; lT: 10; wP: 49; lP: 48; wEl: 77; lEl: 83; lS: 71.

Male. Metatrochanters with a distinct and apically blunt spine; femora enlarged. Metasternum shallowly impressed, finely and very densely punctate and pubescent, posterior middle narrowly impunctate, acam densely punctate. Punctation of sternites fine and dense, denser on posterior middle of sternite 7. Sternite 8 with a shallow broad and sinuous emargination in about posterior eleventh. Sternite 9 apically broadly blunt, apical margin irregularly crenulate (about as in Fig. 43, PUTHZ, 2000), apicolateral brush strong, as long as the sternite. Tergite 10 broadly rounded. Aedeagus (Fig. 13) with a narrow, triangular apical portion, parameres with about 30 setae.

Female. Metatrochanters with an apically blunt tooth. Ventral characters as in the male, sternite 8 with a moderately deep emargination apicomedially (Fig. 14). Valvifer blunt apically, apical brush strong, about as long as the complete valvifer. Tergite 10 broadly triangularly pointed.

Very similar to *D. yunnanensis* but stronger blue-metallic. Punctation of the pronotum (similar to that of *D. yunnanensis*) finer than that of frons and elytra, punctures about as large as an average eye facet, interstices mostly smaller than punctures. Punctation of abdomen less dense than in *D. yunnanensis*: interstices on tergite 7 as large or slightly larger than diameter of punctures (in *D. yunnanensis* smaller than diameter of punctures).

Holotype ♂ and 2♀♀–paratypes: W-Hubei: Daba Shan, river bank 12 km SE Muyuping, ca. 1,000 m, 31°21'N, 110°31'E, gravel floating, 17. VII. 2001, M. SCHÜLKE leg., C-01-14, Wrase 14. HT in the Museum für Naturkunde der Humboldt Universität zu Berlin, Berlin, and 1 PT in coll. SCHÜLKE, Berlin, 1 PT in cP.

Discussion. Above all the new species is distinguished from *D. yunnanensis* in the male by the much shallower emarginated sternite 8 and the much broader aedeagus, in the female by the less deep apical emargination of sternite 8 (compare Fig. 17) and the broader triangularly pointed tergite 10. In my key the new species has to be placed at # 37.

The new species is named in honour of my friend, its collector, Michael SCHÜLKE, Berlin, for improving our knowledge of the Chinese staphylinid fauna.

Dianous ocellatus CAMERON and ***D. acutus*** ZHENG

Amongst material which has been identified as *D. ocellatus* CAMERON there were found two very similar species, both also represented amongst the type specimens. Although I did not get type material from Dr. ZHENG, I am convinced that one of the species is *D. acutus* ZHENG (see also Fig. 1 in ZHENG, 1994).

Both species are very similar in their exoscelettal characters. The best distinguished character is found on the elytra: in *D. ocellatus* the setae on the orange elytral spots are pale/yellowish, in *D. acutus* dark/black. More differential characters are found in the male genitalia.

Dianous ocellatus. Sternite 6 with a distinct but shallow posteromedial impression. Apical portion of the median lobe anteriorly convex with a moderately broad, rounded apex (Fig. 16), the strongly sclerotized internal tube has a longer and narrower distal portion (Fig. 17).

Dianous acutus. Sternite 6 without a posteromedial impression. Apical portion of the median lobe straightly triangularly narrowed (Fig. 18; see also Figs. 177, 182, 183, PUTHZ, 2000), less broad apically, the strongly sclerotized internal tube has a shorter and broader distal portion (Fig. 19).

Material studied: *D. ocellatus* CAMERON: 7♂♂, 3♀♀–syntypes, Naga Hills 9000' Assam; 2♂♂, 2♀♀, Shugun 3000' Assam (NHML, FMCh, cP). Eight of the syntypes belong to the species with light setae on the elytral spot and the aedeagus (Figs. 15, 16), 2♂♂ to *D. acutus*. 1

♂ of the Shugun specimens belongs to *D. ocellatus*, the rest to *D. acutus*.

Designation of lectotype: 1 ♂ on label with a median hole, abdomen turned and separately mounted [this is the specimen figured by CAMERON, 1930 p. 431]. Labels: 1, Type; 2, Naga Hills 9000' Assam (CAMERON's handwriting); 3, *D. ocellatus* CAM. TYPE (CAMERONS's handwriting); 4, M. Cameron Bequest. B. M. 1955–147. 5, Syntype. 6, ♂–LEKTOTYPUS/PUTHZ 2002; 7, *Dianous ocellatus* CAMERON det. V. PUTHZ 2002. Paralectotypes: 4 ♂♂, 3 ♀♀, ibidem (NHML, FMCh and cP); 2 ♂♂, 1 ♀, India: Meghalaya, 1,400 m, Nokrek National Park, 3 km S. Daribokgiri, 25°27'N, 90°19'E, 26. IV. 1999, J. ROLČIK (coll. HROMÁDKA, PRAGUE, cP).

PM of the lectotype: wH: 42; dE: 26; lE: 18.5; lT: 6; wP: 32; lP: 32; wEl: 48; lEl: 51; lS: 44. Diameter of elytral spot: 10.

Dianous acutus ZHENG: the material quoted in PUTHZ, 2000: 478; 2 ♂♂, India, Assam, Naga Hills, 9000'; 1 ♂, 1 ♀, Assam, Shugun, 3000' (NHML, FMCh); 1 ♂, Yunnan, Xishuangbanna, ca. 59 km NW Mengla, ca. 800 m, 9. XII. 1999, JÄCH and SCHÖNMANN (CWBS 369); 1 ♀, Xishuangbanna, ca. 7 km NE Jinghong, ca. 600 m, 12. XI. 1999, JÄCH and SCHÖNMANN (CWBS 377) (NHMW).

Dianous fellowesi sp. nov.

This new species is very close to *D. emarginatus* ZHENG.

Black with some coppery or blue metallic tint, each elytron with a large orange spot, head moderately coarsely and densely punctate, pronotal punctation coarse and dense (except on actual middle, where it is sparse), basal half of elytra coarsely and densely punctate, posterior half (including the orange spot) with dense, oblique sculpture of long rugae, abdomen very finely and very densely punctate; pubescence distinct, whitish yellow, semierect on fore parts, very dense and recumbent on abdomen, missing on the elytral spots. Antennae blackish, base of individual segments reddish, club brownish. Maxillary palpi dark brown, bases of segments reddish. Trochanters reddish, legs black with some metallic tint. Clypeus and labrum blue metallic, densely pubescent. Tarsal segment 4 deeply bilobed.

Length: 5.5–6.8 mm (fore parts: 3.0–3.1 mm)

PM of the HT: wH: 47; dE: 29; lE: 21; lT: 6; wP: 37; lP: 38; wEl: 57; lEl: 58; lS: 49; diameter of elytral spot: 15/16.

Male. Median area of metasternum broadly and shallowly impressed, moderately finely and very densely punctate, reticulated interstices much smaller than half diameter of punctures, diameter of punctures about as large as basal cross section of segment 2 of the maxiallary palpi, acam moderately finely and moderately sparsely punctate. Sternites 3-6 moderately finely, densely punctate medially, reticulated interstices at most as large as punctures, sternite 4 with a shallow median impression, sternite 5 with a distinct, semicircular impression in posterior half, posteromedian impression of sternite 6 yet deeper than that of sternite 5, posterior margin broadly emarginated, sternite 7 with a shallow impression anteromedially and a deep, horseshoe-like impression posteromedially, sides of that impression distinctly elevated and somewhat prominent posteriad, posterior margin broadly emarginate, punctation and pubescence of posteromedian impression fine and very dense. Sternite 8 with a deep triangular excision in about posterior third. Sternite 9 with a short blunt tooth apicolaterally and indistinct fine striae apicomedially, apicolateral brush moderately long, about 2/3 the length of the sternite. Tergite 10 broadly rounded. Aedeagus similar to that of *D. emarginatus* (see Fig. 188, PUTHZ, 2000), apical portion of the median lobe very slightly broader, less bent dorsad, densely set with very long setae. Parameres as in *D. emarginatus*.

Female. Unknown.

In most respects similar to *D. emarginatus*, but larger in size, elytral spot larger, diameter about as long as antennal segment 3, with dense, long rugae. Abdominal punctation yet denser, interstices on tergite 7 smaller than diameter of punctures (in *D. emarginatus* as large as).

Holotype ♂ and 2♂♂–paratypes: Guangxi: Dayaoshan, 19. IX. 1998, J. R. FELLOWES leg. HT in NHML and 1 PT in coll. de ROUGEMONT, 1 PT in cP.

Discussion. In my key the new species has to be inserted at # 111. *D. fellowesi* is distinguished from *D. ocellifer* PUTHZ by its greater length, lack of pubescence on the elytral spot (the spot is densely set with blackish setae in *D. ocellifer*, a character, which has not been noted in my description) and by the male sexual characters, from *D. ocellatus* CAMERON and *D. acutus* ZHENG by the lack of pubescence on the elytral spots, from both furthermore by its greater length and the male sexual characters.

Name of this new species is dedicated to Mr. J. F. FELLOWES, its collector.

New records of Chinese *Dianous*

Dianous obliquenotatus CHAMPION. Yunnan: 2♂♂, 1♀, Xishuangbanna, ca. 50 km SSE Mengyuan, ca. 700 m, 8. XI. 1999, JÄCH *et al.* leg. (CWBS 361); 1♂, 2♀♀, ca. 50 km NW Mengla, ca. 800 m, 9. XI. 1999, JÄCH *et al.* leg. (CWBS 369); 1♂, ca. 7 km NE Jinghong, 12. XI. 1999, ca. 600 m, JÄCH *et al.* leg. (CWBS 377) (NHMW, cP). Vietnam: 8♂♂, 8♀♀, Hatinh Province, Rao An, 13 km W Huang Son, route 8, 7 km S. Nuoc Sôt village, 18°21'N, 105o15'E, 220 m, rocks in splash zone of stream, 16. V. 1998, L. HERMAN leg. (together with *D. luteolunatus* PUTHZ, *D. srivichaii* ROUGEMONT and *D. vietnamensis* PUTHZ) (the American Museum of Natural History, New York, cP). This species was known from India and Thailand, **new to China and Vietnam**.
In my key this species has to be placed at # 14, where it is easily distinguished from the other species there by the yellow spot just behind the middle of elytra. Length: 7.0–8.5 mm.

Dianous siwalikensis CAMERON. Yunnan: 2♂♂, 3♀♀, Xishuangbanna, ca. 50 km SSE Menglan, Mengyüan, 8. XI. 1999, ca. 700 m, JÄCH *et al.* leg. (CWBS 361) (NHMW, cP). Nepal: 1♀, Prov. Gandaki, district Kaski, Tikhedunga, 1,500 m, 28°20.93'N, 83°44.53'E, F. WOLF leg. (Naturkundemuseum Erfurt); 1♀, Manaslu Himal, Marsyongdi Khola valley, Bhachok Khola, 1,000 m, 13. IV. 1999, SCHMIDT leg. (coll. HIRTHE). This species was described from India and recorded from Vietnam; **new to China and Nepal**.
In my key this species has to be placed at # 43. It is distinguished from *D. punctiventris* CHAMPION by the longer segment 1 of metatarsi (which is much longer than the 3 following segments combined) and by the punctation of elytra, which is moderately fine and dense, interstices often as large as punctures. ♂: Median lobe broadly triangular narrowed. ♀: Sternite 8 with a very shallow apicomedial emargination. Length of body: 7.0–9.0 mm.

Dianous cruentatus L. BENICK. Yunnan: 2♀♀, Gaoligong Shan, 2,200–2,500 m, 24°57'N, 98°45'E, 8–16. V. 1995, O. SEMELA leg. (coll. SHIBATA, cP). Of this species only the ♀–HT, described from Northern Myanmar, was known. **New to China.**
The specimens from Yunnan has been compared to the HT. PM of the HT and of 1♀ from Yunnan: wH: 53 (54); dE: 28 (30); lE: 25 ((25); lT: 9 (8); wP: 36 (36); lP: 41 (40); wEl: 55 (56); lEl: 60 (59); lS: 49 (49). Total length: 5.8–6.8 mm (fore parts: 3.4–3.5 mm).

Female. Metasternum convex, longitudinally impressed medially, laterally of the impunctate median impression moderately finely and moderately densely punctate, interstices distinctly but not much larger than diameter of punctures, smooth. Sternites 3–6 finely and moderately densely punctate, interstices smooth. Sternite 7 finely and very densely punctate posteromedially, posterior margin slightly emarginate. Sternite 8 broadly rounded. Valvifer with a long prominent tooth apicolaterally, brush nearly as long as the valvifer. Tergite 10 rounded.

Dianous bimaculatus CAMERON. Yunnan: 1♂, Gaoligong Shan, 1,500–2,500 m, 25°22'N, 98°49'E, 17–24. V. 1995, O. SEMELA leg. (coll. SHIBATA). This species has been described from India (Assam) and recorded from Nepal. **New to China**.
In my key this species has to be placed at # 50. It is distinguished from *D. hainanensis* PUTHZ by the much smaller elytral spot and the larger (= much longer) expulsion hooks of the median lobe.

Dianous siamensis ROUGEMONT. Yunnan: 1♂, 4♀♀, Xishuangbanna, Menglan, Tropical Botanical Garden, ca. 500 m, 6. XI. 1999, JÄCH *et al.* leg. (CWBS 358); 1♀, ca. 10 km NW Menglan, ca. 700–800 m, 7. XI. 1999, JÄCH *et al.* leg. (CWBS 360); 1♂, ca. 13 km N Mengyang, ca. 700 m, 10. XI. 1999, JÄCH *et al.* leg. (CWBS 373); 1♀, ca. 11 km N Mengyang, ca. 700 m, 12. XI. 1999, JÄCH *et al.* leg. (CWBS 378) (NHMW, cP). Myanmar: 13♂♂, 9♀♀, Kachin State, ca. 12 km S. Putao, W. Mularshidi village, 500–550 m, 27°15.13'N, 97°24.95'E, SCHILLHAMMER and SCHUH leg. (60) (NHMW, cP). This species has been described from Thailand and recorded from Vietnam. **New to China and to Myanmar**.
In my key it has to be placed at # 102 as follows. Pronotum and elytra without distinct pubescence. Sternum 8 with a long apicolateral tooth. ♂: Aedeagus (Fig. 1, ROUGEMONT, 1983). 4.3–5.5 mm (fore parts: 2.5–2.7 mm).

Dianous championi CAMERON. Yunnan: 1♂, 2♀♀, Gaoligong Shan, 2,200–2,500 m, 24°57'N, 98°45'E, 8–16. V. 1995, O. SEMELA leg. (coll. SHIBATA, cP). This species was described from India and also recorded from Nepal. **New to China**.
In my key this species has to be placed at # 193. It is distinguished from *D. rugosipennis* PUTHZ by the much sparser punctation of frons (interstices mostly larger than punctures), the less coarse and sparser pronotal punctation, by the sharp elytral rugae (in *D. rugosipennis* they are rounded) and by the aedeagus (Fig. 33, PUTHZ, 1981).

Dianous atrocyaneus PUTHZ. Taiwan: 1♀, Hualien Hsien: near Juisui, 29. III. 1984, Y. SHIBATA leg. (coll. SHIBATA).
This species has been known only from the ♂-HT. It is very remarkable by its long erect pubescence (Fig. 12).

Dianous tumidifrons PUTHZ. Yunnan: 1♂, above Dali, 2,000–2,200 m, 4–17. IV. 1999, SCHAWALLER leg. (Staatliches Museum für Naturkunde, Stuttgart). This species has been described from Nepal. **New to China**.
In my key it has to be placed at # 32. It is distinguished from *D. versicolor* CAMERON by the distinctly bilobed tarsal segment 4 and the sexual characters (see Figs. 3, 10, PUTHZ, 1995).

Dianous psilopterus L. BENICK. Yunnan: 1♀, Xishuangbanna: ca. 6 km NW Mengla, 8. XI. 1999, JÄCH *et al.* leg. (CWBS 365) (NHMW). This species has been described from Northern Myanmar. **New to China**.
In my key it has to be placed at # 162. From *D. gonggamontis* PUTHZ it is distinguished by indistinct pubescence on pronotum and elytra, the basal half of femora, which is yellowish red and by sternite 8 in the female, which has a small and short apicomedial projection.

Also *D. psilopterus* is somewhat smaller than *D. gonggamontis*.

Dianous cyaneocupreus PUTHZ. This Taiwanese species was described from one single male. In coll. SHIBATA there were found numerous specimens. Taipei Hsien: 28♂♂, 28♀♀, Shiting, 16. XII. 1976, K. MATSUKI leg.; 4♂♂, ibidem, 9. XII. 1976, 27. I. 1977, J. C. LIEN leg.; 3♂♂, 3♀♀, ibidem, 13. III. 1977, K. MATSUKI leg.; 5♂♂, 10♀♀, near Yungting, 13. I. 1977, K. MATSUKI leg.; 1♀, Wulai, 26. VIII. 1970, Y. SHIBATA. Nantou Hsien: 1♂, near Chushan, 11. II. 1977, J. C. LIEN leg. (coll. SHIBATA, cP). Only 3 of these specimens have coppery elytral marks, the rest has orange spots. In the female sternite 8 has a shape as in fig. 8. In my key this species should also be inserted at # 169. It is distinguished from *D. socius* ZHENG by the distinct bluish tint, the much broader apical emargination and narrower apical lobes of the median lobe.

要約

Volker PUTHZ：中国および台湾産 *Dianous* 属について． —— 中国および台湾より *Dianous* 属の以下に記す 7 新種を記載した．*Dianous fellowesi* (Guangxi), *D. kishimotoi* (Sichuan), *D. lieni* (Taiwan), *D. rimosipennis* (Yunnan), *D. Schuelkei* (Hubei), *D. shibataianus* (Taiwan), *D. vorticipennsi* (Yunnan). 本属は中国からは初めての記録である．また，ミャンマーから 1 種，ネパールから 1 種，およびベトナムから 1 種をそれぞれ新しく記録するとともに，*Dianous luteoguttatus* 種群を創設した．なお，*Dianous ocellatus* CAMERON の Syntype シリーズには，酷似している *D. actutus* ZHENG が含まれており，ここに Lectotype と Paralectotype を指定するとともに，区別点を明確にした．

References

BENICK, L., 1942. Entomological results from the Swedish Expedition 1934 to Burma and British India. Coleoptera: Staphylinidae. gesammelt von RENE MALAISE. *Arkiv vür Zoologie*, **33A**17: 1–48.

CAMERON, M., 1930. The fauna of British India, including Ceylon and Burma. Coleoptera, Staphylinidae I. XVII+471 pp., 1 map, 3 plts. London.

PUTHZ, V., 1980. Die gelblich gemakelten *Dianous*-Arten der Welt: Bestimmungstabelle und Neubeschreibungen (Coleoptera, Staphylinidae) 175. Beitrag zur Kenntnis der Steninen. *Reichenbachia*, **18**: 1–11.

PUTHZ, V, 1981. Was ist *Dianous* LEACH, 1819, was ist *Stenus* LATREILLE, 1796? Oder: Die Aporie des Stenologen und ihre taxonomischen Konsequenzen (Coleoptera, Staphylinidae) 180. Beitrag zur Kenntnis der Steninen. *Entomologische Abhandlungen Staatliches Museum der Tierkunde, Dresden* **44**: 87–132.

PUTHZ, V, 2000. The genus *Dianous* LEACH in China (Coleoptera, Staphylinidae) 261. Contribution to the knowledge of Steninae. *Revue suisse de Zoologie*, **107**: 419–559.

ROUGEMONT, G. M. DE, 1983. More Stenine beetles from Thailand (Coleoptera, Staphylinidae). *Natural History Bulletin Siam Society*, **31**: 9–54.

ZHENG, F. K., 1994. Notes on genus *Dianous* LEACH from Dai Ba Mountains, Sichuan (Coleoptera: Staphylinidae, Steninae). *Acta Entmologica Sinica*, **37**: 479–482.

(Received May 13, 2005; Accepted June 3, 2005)

Ent. Rev. Japan, **60** (2): 153–206, October 31, 2005

Scirtidae of the Oriental Region, Part 8. New Species and Additional Record of the Genus *Hydrocyphon* (Coleoptera: Scirtidae)

Hiroyuki YOSHITOMI

Bioindicator Co., Ltd. (Sapporo Branch), Kita 1, Nishi 2–11, Chuô-ku, Sapporo, 060–0001 Japan
E-mail: yoshitomi@bioindicator.co.jp

and

Masataka SATÔ

Dia Cuore Tokushige 306, Kamegahora 3–1404, Midori-ku, Nagoya, 458–0804 Japan

Abstract Thirty-three new species of the genus *Hydrocyphon* are described from the Oriental Region under the eight species-groups. New species described in this paper are as follows: *Hydrocyphon bifidus* sp. nov., *H. mirabilis* sp. nov., *H. nyholmi* sp. nov., *H. tamilensis* sp. nov., *H. triforius* sp. nov., *H. thailandicus* sp. nov., *H. nepalensis* sp. nov., *H. kachinensis* sp. nov., *H. lusonensis* sp. nov., *H. subrotundus* sp. nov., *H. subcelatus* sp. nov., *H. kinabalensis* sp. nov., *H. palawanensis* sp. nov., *H. javanicus* sp. nov., *H. baliensis* sp. nov., *H. manfredi* sp. nov., *H. sarawakensis* sp. nov., *H. kodadai* sp. nov., *H. palniensis* sp. nov., *H. chiangmaiensis* sp. nov., *H. sumatrensis* sp. nov., *H. malaysianus* sp. nov., *H. submalaysianus* sp. nov., *H. boukali* sp. nov., *H. sagaingensis* sp. nov., *H. dispar* sp. nov., *H. spinosus* sp. nov., *H. klausnitzeri* sp. nov., *H. narraensis* sp. nov., *H. indonesianus* sp. nov., *H. keralaensis* sp. nov., *H. trilobus* sp. nov., and *H. subtrilobus* sp. nov. *Cyphon amaurus* KLAUSNITZER is transferred to the genus *Hydrocyphon*. Four species-groups, i.e., *mirabilis*, *nyholmi*, *tamilensis* and *kinabalensis* species-groups are newly provided. The *nakanei* species-group is synonymized with *kambaiticus* species-group. Some additional records in the previously known species are shown. The world list of the species and species-group is updated.

Introduction

In the eighth part of the revisional study of the family Scirtidae of the Oriental Region (part 1: YOSHITOMI, 2003; parts 2–4: YOSHITOMI and SATÔ, 2003 a, b, c; parts 5–7: YOSHITOMI and SATÔ, 2004 a, b, c), we are going to describe 33 new species of the genus *Hydrocyphon* under the eight species-groups from China, Malaysia, Thailand, Nepal, Myanmar, the Philippines, India and Indonesia. This is the first record of this genus from Malaysia, the Philippines and Indonesia.

Materials and Methods

About 200 specimens in total preserved in the museum collections (see abbreviation) were examined and dissected, but a part of the female specimens could not be determined the species name. In the Oriental Region, several species are sympatrically distributed (*cf.* YOSHITOMI and SATÔ, 2003a), and its external features resemble closely. So that we need to check the male genitalia for the determination of the species.

Some Chinese specimens were collected by CWBS (China Water Beetles Survey; JÄCH and JI, 2003).

General observation and dissection were done under a stereoscopic microscope. Microstructures were observed under a microscope after making the permanent slides using microcover glass with Canada Balsam. Collecting data and slide number were stuck with paste on the slide, and the same number were also labeled under the specimens to identify them. Red (holotype) or yellow (paratype) type labels were attached to all the type specimens determined in this paper.

Arithmetic mean of the measurement is given in parentheses after the range.

Holotypes are deposited in BLKU, NMW or NSMT, and the paratypes are in BLKU, NMW and/or EUM.

The terminology refers generally to NYHOLM (1972, 2000) for the genital organ.

Abbreviations

BLKU: Biosystematic Laboratory, Graduate School of Social and Cultural Studies, Kyushu University, Fukuoka;
NMW : Naturhistrisches Museum, Wien;
NSMT: National Science Museum, Tokyo;
EUM: Entomological Laboratory, Ehime University, Matsuyama;
OXUM: Hope Entomological Collections in Oxford University Museum of Natural History;
PL: length of pronotum;
PW: width of pronotum;
EL: length of elytra;
EW: width of elytra;
TL: total length (PL plus EL).

Taxonomy

Hydrocyphon REDTENBACHER

Hydrocyphon REDTENBACHER, 1858: 519. — PIC, 1914: 38. — YOSHITOMI, 2001: 88. Type species (by monotype): *Cyphon deflexicollis* MÜLLER, 1821.

This genus is distributed widely in the Palearctic Region, and 60 species under the 10 species-groups have been described from Europe and Oriental Asia.

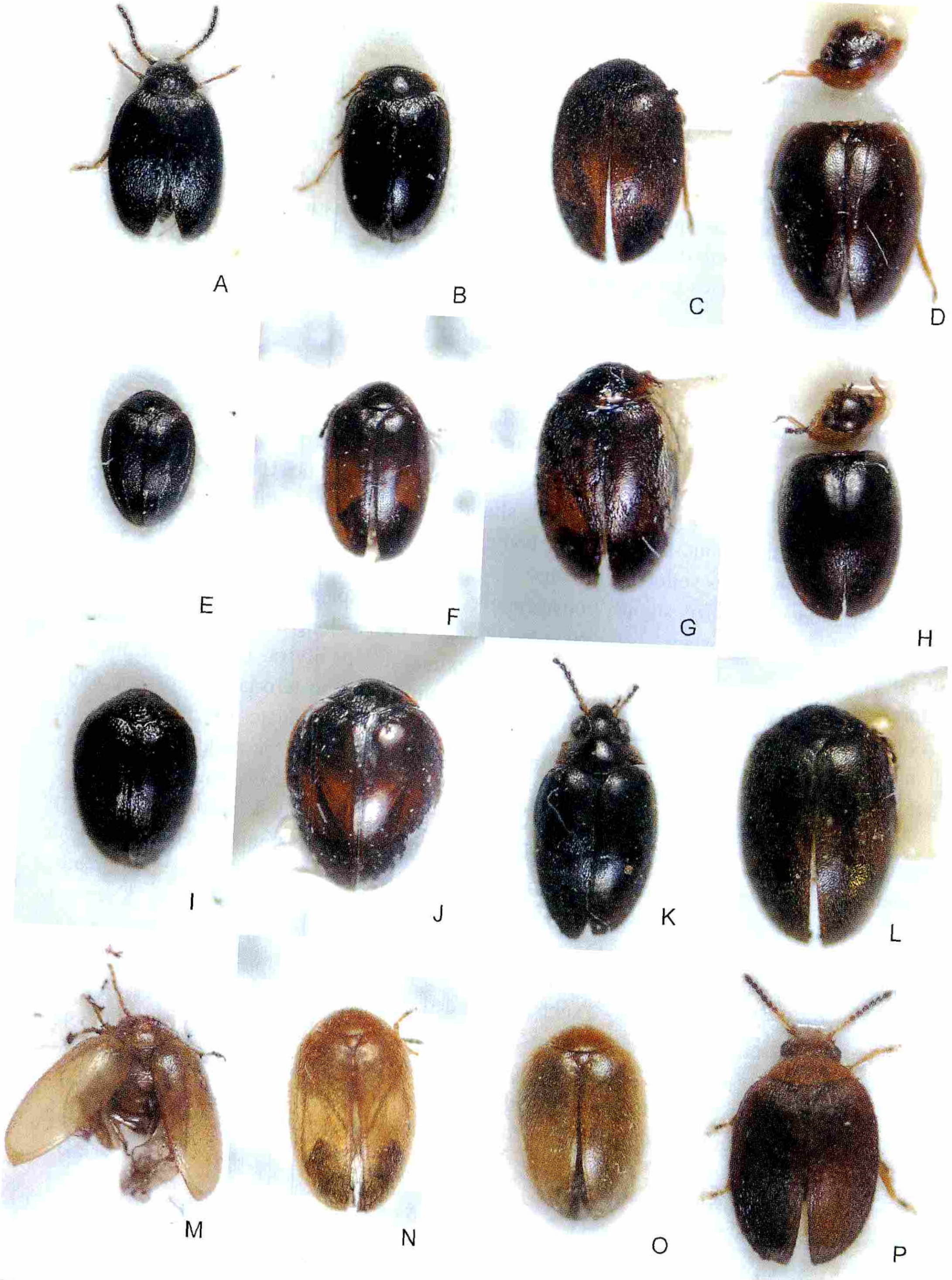


Fig. 1. Photographs of *Hydrocyphon* spp., holotype, male. ——— A, *H. bifidus* sp. nov.; B, *H. mirabilis* sp. nov.; C, *H. nyholmi* sp. nov.; D, *H. tamilensis* sp. nov.; E, *H. triforius* sp. nov.; F, *H. thailandicus* sp. nov.; G, *H. nepalensis* sp. nov.; H, *H. kachinensis* sp. nov.; I, *H. lusonensis* sp. nov.; J, *H. subrotundus* sp. nov.; K, *H. subcelatus* sp. nov.; L, *H. kinabalensis* sp. nov.; M, *H. palawanensis* sp. nov.; N, *H. javanicus* sp. nov.; O, *H. baliensis* sp. nov.; P, *H. manfredi* sp. nov.

Hydrocyphon kambaiticus species-group

See YOSHITOMI and KLAUSNITZER (2003) and YOSHITOMI and SATÔ (2003a).

YOSHITOMI (2001) has erected *nakanei* species-group for *Hydrocyphon nakanei* YOSHITOMI and *H. aritai* YOSHITOMI. The *nakanei* species-group is closely related to *kambaiticus* species-group, and distinguished from the latter by the shape of tegmen which is flat and short in parameres. The following new species has a intermediate characteristic in the shape of tegmen between *nakanei* and *kambaiticus* species-groups, therefore, we include the *nakanei* species-group to *kambaiticus* species-group in this paper.

Hydrocyphon bifidus sp. nov.

(Figs. 1A, 3)

Type material. Holotype (NMW): 1♂, "Leigong shan (ca. 1,750 m), east slope, 26°22. 71'N, 108°12.71'E, ca. 0.5 km east of pass, NE Leishan, Leishan Co. SE Kaili, China, 17–VI–2001, SCILHAMMER and WANG leg. (CWBS 437)", genitalia on slide no. HY 777.

Description. Male. Body oblong-oval, slightly convex above, shining, closely covered with short setae throughout. Coloration of body almost black; antennal segments I–IV, lateral part of pronotum and legs yellowish brown.

Head moderate in size, slightly convex above, finely and sparsely punctate. Eyes moderate in size, prominent; the distance between eyes about 2.1 times as long as the maximum diameter of an eye. Antennae slender, reaching about proximal 1/3 of elytra. Pronotum transverse, depressed above in lateral parts, closely punctate; antero- and postero-lateral corners obtuse; front margin almost straight; lateral and posterior margins gently arcuate; PW/PL 2.24. Scutellum moderate in size, subtriangular. Elytra oblong-oval, broadest at the middle, closely punctate; EL/EW 1.29; EL/PL 4.74; EW/PW 1.65; TL/EW 1.56. Legs relatively long, slender.

Apical margin of sternite VII gently arcuate. Tergite VIII lightly sclerotized, square, covered with short spines along posterior margin, with a pair of short apodemes; sternite VIII widely membranous, bearing short setae in apical part; tergite IX moderately sclerotized, bifurcate in posterior margin, punctate in posterior part, with a pair of long and stout apodemes. Sternite IX well sclerotized, rod-liked, bilobed in apical 1/2; outer lobe longer than inner ones, pointed at postero-lateral corners of apex; inner ones expanded and rounded in apical part. Tegmen short, weakly sclerotized; basal part short, subparallel-sided; parameres wide, with a pair of membranous projections protruding from postero-lateral corners. Penis long and slender, well sclerotized, symmetrical, about 1.6 times as long as tegmen; pala gently tapered posteriad, almost straight in anterior margin; trigonium provided with two short projections, and with long median plate; parameroids long, subparallel-sided, obtuse at apices, sparsely covered with fine punctures in apical part.

Female. Unknown.

Measurement. Male (n = 1): TL 2.18 mm; PW 0.85 mm; PL 0.38 mm; EW 1.40 mm; EL 1.80 mm.

Distribution. China.

Remarks. This species is somewhat similar to *Hydrocyphon nakanei* YOSHITOMI and *H. aritai* YOSHITOMI in the short parameres of tegmen, but is characterized by the bifurcated tergite IX.

Etymology. The species name refers to the bifurcated tergite IX.

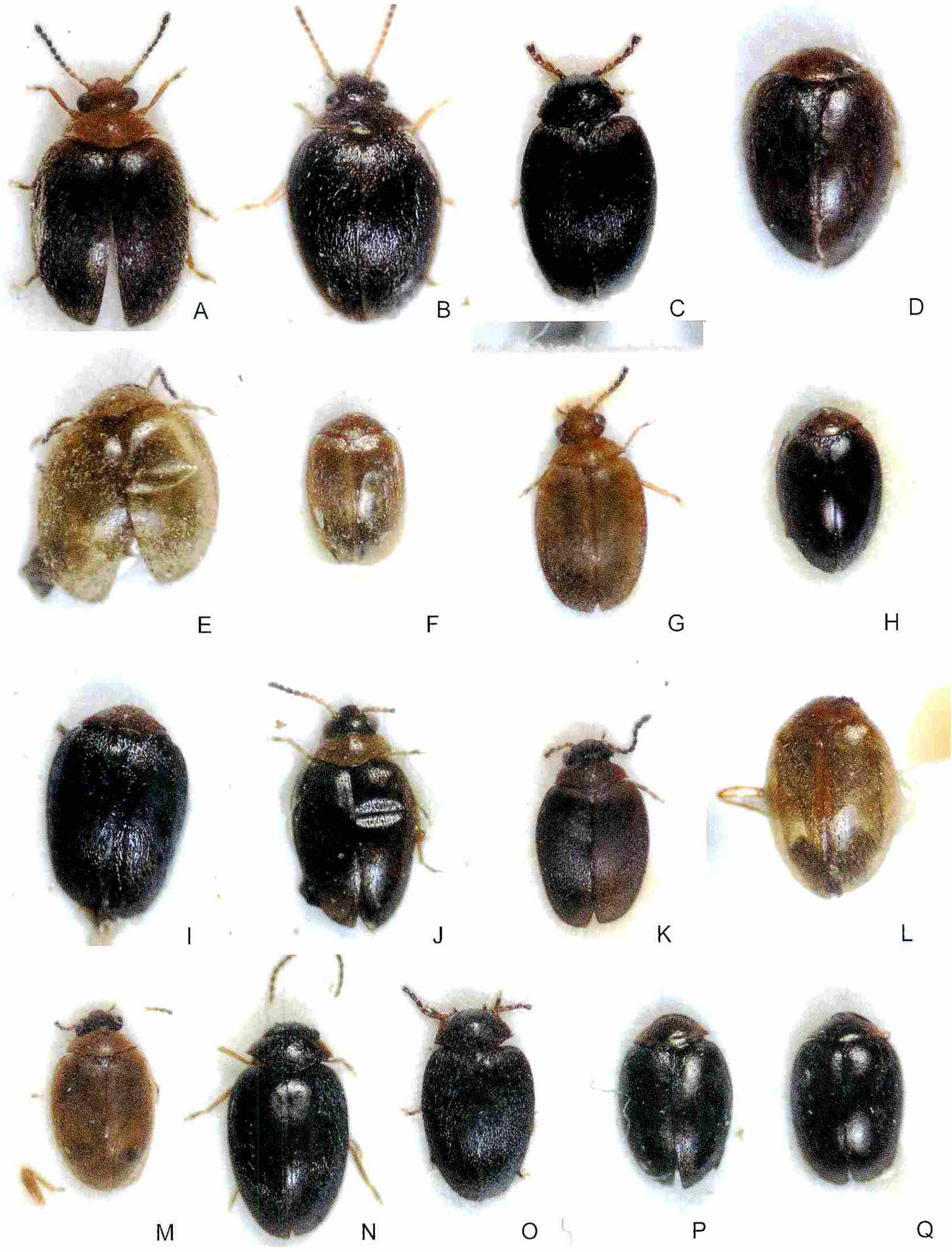


Fig. 2. Photographs of *Hydrocyphon* spp., holotype, male. ——— A, *H. sarawakensis* sp. nov.; B, *H. kodadai* sp. nov.; C, *H. palniensis* sp. nov.; D, *H. chiangmaiensis* sp. nov.; E, *H. sumatrensis* sp. nov.; F, *H. malaysianus* sp. nov.; G, *H. submalaysianus* sp. nov.; H, *H. boukali* sp. nov.; I, *H. sagaingensis* sp. nov.; J, *H. dispar* sp. nov.; K, *H. spinosus* sp. nov.; L, *H. klausnitzeri* sp. nov.; M, *H. narraensis* sp. nov.; N, *H. indonesianus* sp. nov.; O, *H. keralaensis* sp. nov.; P, *H. trilobus* sp. nov.; Q, *H. subtrilobus* sp. nov.

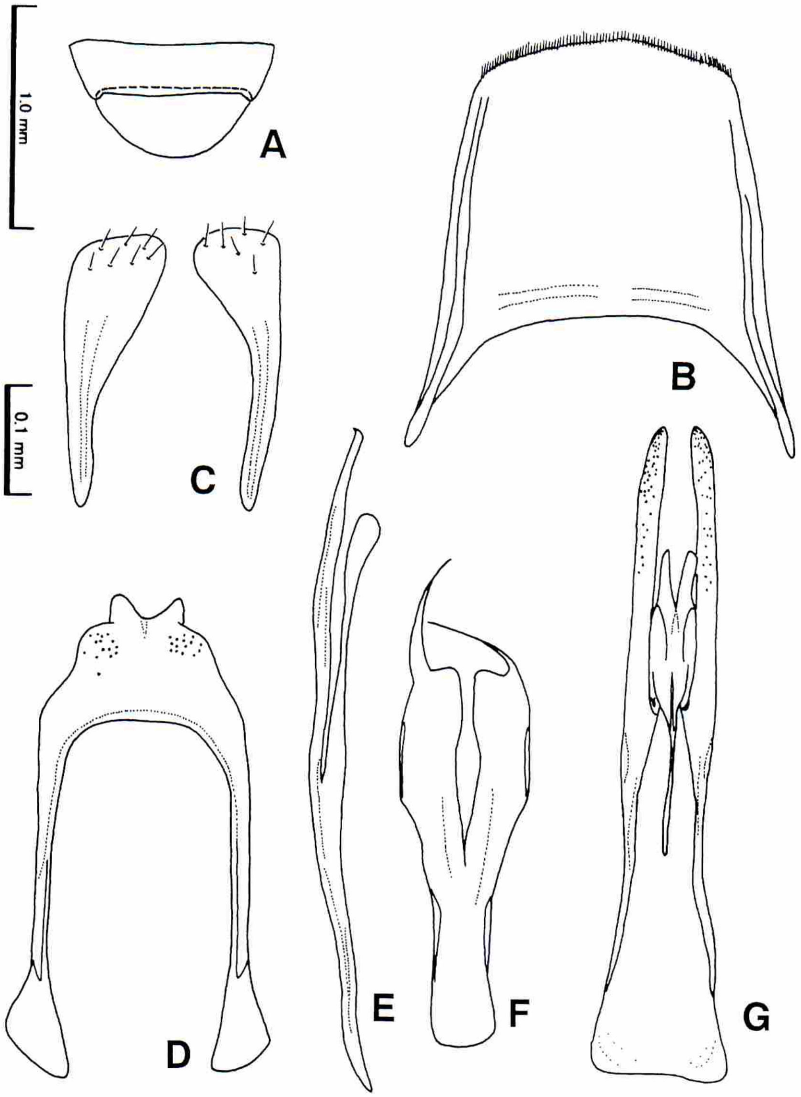


Fig. 3. *Hydrocyphon bifidus* sp. nov., holotype, male. ——— A, Sternites VI–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

Hydrocyphon sinicus PIC, 1934

Hydrocyphon sinicus PIC, 1934: 23. – YOSHITOMI and KLAUSNITZER, 2003: 526.

Additional material examined. 1♂ (NSMT), "Tieluba, 1,400 m Nangiang, Sichuan China, 17–VI–2004, M. SATÔ leg.", genit. s. no. HY 917.

Distribution. China.

Hydrocyphon mirabilis species-group

This species-group is defined by the following characteristics of male genitalia: sternite IX moderately sclerotized, rod-like, expanded and plate-like in apical part; tegmen with a pair of short lateral plates; parameres of tegmen long, connected each other in posterior part; penis symmetrical, long; para oblong, gently tapered anteriad; trigonium simple subtriangular, without distinct projection; parameroids long.

This species-group is very remarkable in having subtriangular trigonium of penis. The shape of tegmen is similar to that of the *renati* species-group in having a pair of lateral plates and indistinct parameres.

Hydrocyphon mirabilis sp. nov.

(Figs. 1B, 4)

Type material. Holotype (NMW): 1♂, "Trib. of Guanhe river (650–850 m), nr. Shidu

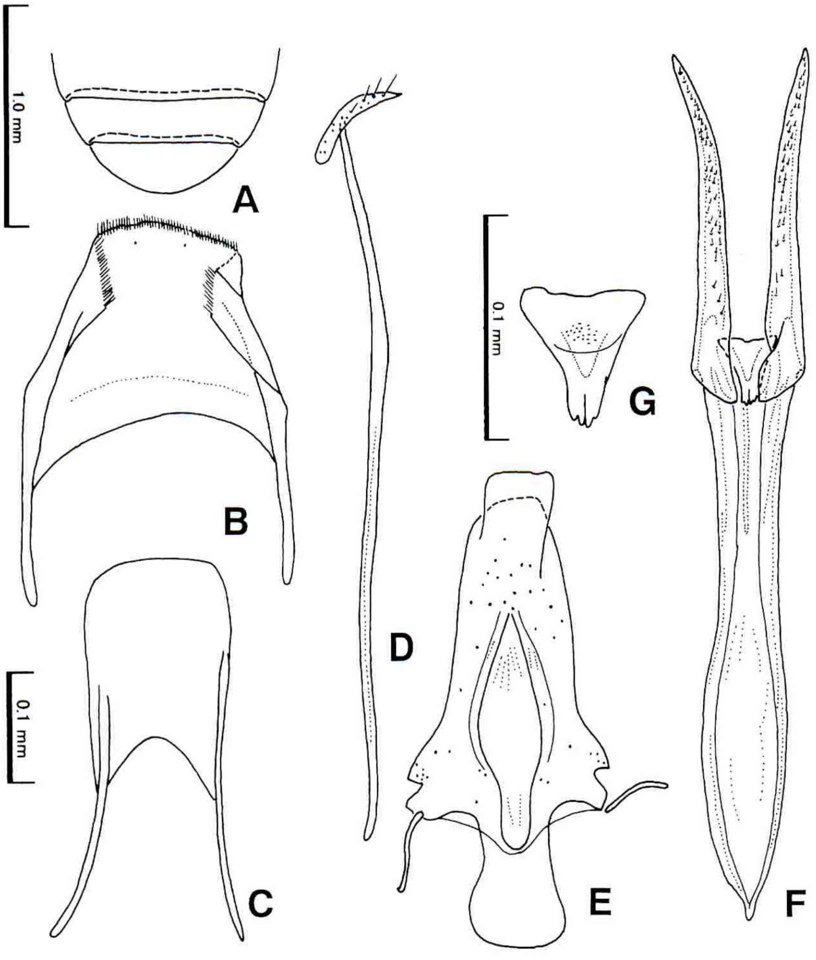


Fig. 4. *Hydrocyphon mirabilis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis; G, trigonium of penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

vill., 27°32.71'N, 108°36.30'E, Jiangkou Co. ca. 50 km SW Jiangkou, Guizhou, China, 1–IV–2001, SCHILHAMMER and WANG leg. (CWBS 445)", genit. s. no. HY 778.

Description. Male. Body oblong-oval, slightly convex above, shining, closely covered with short setae throughout. Coloration of body almost black; antennal segments I–V, lateral margins of pronotum and legs yellowish brown.

Head large, almost flat in dorsal surface, closely punctate. Eyes large, prominent; the distance between eyes about 2.4 times as long as the maximum diameter of an eye. Antennae moderate in length, reaching about proximal 1/4 of elytra. Pronotum transverse, slightly depressed above in lateral parts, closely punctate; antero-lateral corners obtuse; postero-lateral corners almost right-angled; front margin almost straight; lateral and posterior margins gently arcuate; PW/PL 2.55. Scutellum small, subtriangular. Elytra oblong-oval, subparallel-sided near base to apical 1/3, punctate closely; EL/EW 1.29; EL/PL 4.20; EW/PW 1.27; TL/EW 1.60. Legs relatively long and slender.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, trapezoidal, covered with short spines along posterior margin, with a pair of short apodemes; sternite VIII widely membranous; tergite IX lightly sclerotized, trapezoidal, with a pair of relatively long apodemes; sternite IX moderately sclerotized, rod-liked, expanded and plate-liked in apical part which is covered with fine punctures and setae. Tegmen long, moderately sclerotized, with a pair of short lateral plates; basal part short, spoon-liked; parameres long, connected with each other in posterior part, sparsely punctate, projecting and bidentate laterally in proximal part. Penis well sclerotized, symmetrical, long, about 2.0 times as long as tegmen; pala oblong, gently tapered anteriad, pointed in anterior margin; trigonium simple subtriangular, without distinct projection; parameroids long, evenly tapered to apices, curved laterally in apical part, covered with minute setae in apical 2/3.

Female. Unknown.

Measurement. Male (n = 1): TL 2.08 mm; PW 1.02 mm; PL 0.40 mm; EW 1.30 mm; EL 1.68 mm.

Distribution. China.

Remarks. This species is similar to the members of the *renati* species-group in the shape of the tegmen with a pair of lateral plates and indistinct parameres, but is very remarkable species in having very strange shape of penis.

Etymology. The species name refers to the remarkable shape of penis.

Hydrocyphon nyholmi species-group

This species-group is defined by the following characteristics of male genitalia: sternite IX V-shaped; tegmen oblong, with indistinct parameres; penis distinctly asymmetrical, with open para; trigonium composed of one projection; parameroids asymmetrical. This species-group is very remarkable in having strange shaped sternite IX, tegmen and penis, and its relatives are not supposed.

Hydrocyphon nyholmi sp. nov.

(Figs. 1C, 5)

Type material. Holotype (NSMT): 1♂, "[Central NEPAL], Chumrung (2,000 m) –

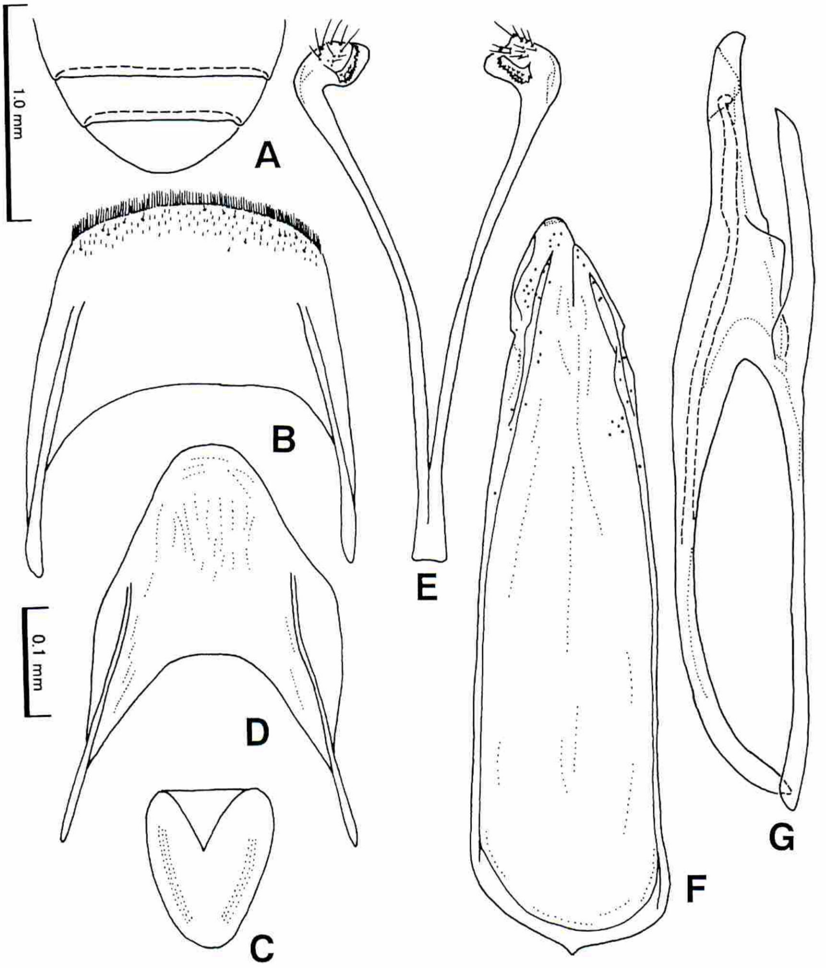


Fig. 5. *Hydrocyphon nyholmi* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

Kiumrung (1,800 m) nr. Ghandrung, 22. X. 1981, M. SAKAI", genit. s. no. HY 804. Paratypes (EUM, NSMT, NMW): 3♂♂, "Lamosangu, 900 m, Sindhu, NEPAL, Oct. 18–21. 1979, M. SATÔ leg.", genit. s. no. HY 798, 796, 810; 3♂♂, "[Central NEPAL] Ghandrung, (1,890 m) – Landrung (1,600 m), 23. X. 1981, M. SAKAI", genit. s. nos. HY 796, 798, 810.

Description. Male. Body oblong-oval, convex above, shining, closely covered with yellowish white setae throughout. Coloration of body blackish brown; antennae, lateral margin of pronotum and legs brown, but antennal segments VII–XI fuscous.

Head moderate in size, slightly convex above, closely punctate. Eyes large and prominent; the distance between eyes about 2.6 times as long as the maximum diameter of an eye. Antennae moderate in length, rather stout, reaching about proximal 1/3 of elytra. Pronotum transverse, slightly depressed above in lateral parts, punctate as in head; antero- and postero-lateral corners obtuse; front and lateral margins almost straight; posterior margin gently arcuate; PW/PL 2.38–2.80 (2.59). Scutellum small and subtriangular. Elytra oblong-oval, broadest at the middle, closely punctate; EL/EW 1.30–1.41 (1.34); EL/PL 4.83–5.43 (5.01); EW/PW 1.33–1.56 (1.45); TL/EW 1.57–1.67 (1.61). Legs relatively long and slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines along posterior margin, closely covered with minute setae and spines in posterior part, with short apodemes; sternite VIII widely membranous; tergite IX lightly sclerotized, with a pair of long and slender apodemes; sternite IX well sclerotized, V-shaped, expanded interiorly in apical part which is covered with irregular setae, with a pair of serrate plates situated in interior part of apices. Tegmen large, moderately sclerotized, oblong, sparsely and finely punctate in apical part; basal margin arcuate, projecting anteriorly in middle part; parameres indistinct. Penis large, well sclerotized, distinctly asymmetrical, as long as tegmen; pala long, not closed; trigonium composed of a long and large asymmetric projection, obtuse at apex; median plate indistinct; parameroids distinctly asymmetrical, shorter than trigonium, right one stout, pointed at apex, left one long and slender, obtuse at apex.

Female. Unknown.

Measurement. Male (n = 5): TL 2.05–2.40 (2.22) mm; PW 0.90–1.00 (0.97) mm; PL 0.35–0.40 (0.37) mm; EW 1.30–1.48 (1.38) mm; EL 1.70–2.00 (1.85) mm.

Distribution. Nepal.

Remarks. This species is closely related to the following species in the characteristics of male genitalia, but is distinguished from the latter by the shape of apical part of sternite IX, the basal margin of tegmen projecting anteriorly and the different structure of the penis.

Etymology. The species is named after the late Dr. T. NYHOLM who was an excellent taxonomist of the family Scirtidae.

Hydrocyphon amaurus (KLAUSNITZER, 1980), **comb. nov.**

Cyphon amaurus KLAUSNITZER, 1980: 213.

Remarks. This species is transferred to the genus *Hydrocyphon* judging from the characteristics of male genitalia.

Distribution. India.

Hydrocyphon tamilensis **species-group**

This species-group is defined by the following characteristics of male genitalia: parameres of tegmen indistinct, with a pair of lateral plates; penis asymmetrical, with two projections in trigonium. This species-group is related to *renati* species-group in having a similar shape of tegmen, but differs from it by the distinctly asymmetrical penis.

Hydrocyphon tamilensis sp. nov.

(Figs. 1D, 6)

Type material. Holotype (NMW): 1♂, "INDIA: Tamil Nadu, 19. 1. 1999 Nilgiri Hills, Kotagiri env Kadashola, 11°25'N, 76°55'E, 1,500 m, leg. D. BOUKAL (74)", genit. s. no. HY 855.

Description. Male. Body oblong-oval, convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown; antennae, pronotum and legs yellowish brown.

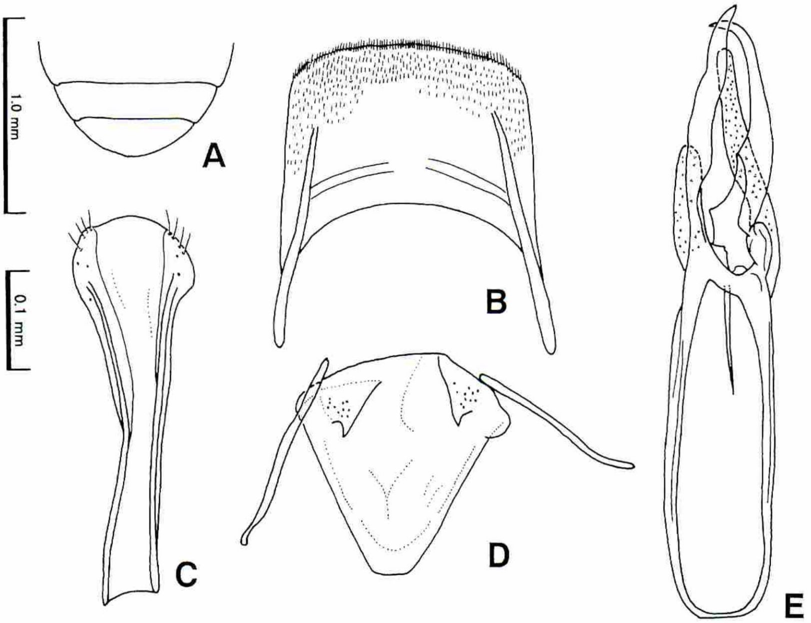


Fig. 6. *Hydrocyphon tamilensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite IX; D, tegmen; E, penis. Scales: 1.0 mm for A, 0.1 mm for B–E.

Head moderate in size, slightly convex above, finely punctate; clypeus relatively long, almost straight in front margin. Eyes moderate in size, prominent; the distance between eyes about 2.1 times as long as the maximum diameter of an eye. Antennae (missing in segments V–XI) slender. Pronotum transverse, slightly depressed above in lateral parts, finely and closely punctate; antero-lateral corners obtuse; front margin almost straight; postero-lateral corners right-angled; posterior margin gently arcuate; PW/PL 2.77. Scutellum moderate in size, subtriangular, punctate as in pronotum. Elytra oval, broadest just before the middle, strongly and closely punctate; EL/EW 1.27; EL/PL 5.09; EW/PW 1.44; TL/EW 1.52. Legs relatively long and slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, covered closely with short spines in apical part, with a pair of long apodemes; sternite IX lightly sclerotized, oblong, with a few pairs of short setae in apical part; sternite VIII and tergite IX membranous. Tegmen moderately sclerotized, with indistinct parameres, with a pair of long lateral plates. Penis large, well sclerotized, asymmetrical; pala oblong, subparallel-sided; parameroids distinctly asymmetrical, left one shorter than right one, closely punctate, with rounded apices; trigonium distinctly asymmetrical, pointed at apices, consisting of two long projections which are longer than parameroids, right one curved interiorly near apex; median plate long.

Female. Unknown.

Measurement. Male (n = 1): TL 2.13 mm; PW 0.97 mm; PL 0.35 mm; EW 1.40 mm; EL 1.78 mm.

Distribution. India.

Remarks. This is a very remarkable species in having a strange-shape of penis, and its affinity is unknown.

Etymology. The species is named after the type locality.

Hydrocyphon renati species-group

See YOSHITOMI and KLAUSNITZER (2003).

Hydrocyphon triforius sp. nov.

(Figs. 1E, 7)

Type material. Holotype (NMW): 1♂, "MALAYSIA 29. 1. 1992 KEDAH: SW–Langkawi Telage Tujuh, leg. JÄCH (12)", genit. s. no. HY 894. Paratypes (NSMT, NMW): 1♂, "Cameron Highland, Malaysia Nov. 30, 1968, M. SATÔ leg.", genit. s. no. HY 381; 2♂♂, "W–THAILAND, Tham Tharn Lot NP, N Kanchanaburi (3), leg. JÄCH 28./29. 11, 1990", genit. s. nos. HY 867, 873.

Description. Male. Body oval, convex above, shining, closely covered with short setae throughout. Coloration of body almost black; antennae and legs yellowish brown.

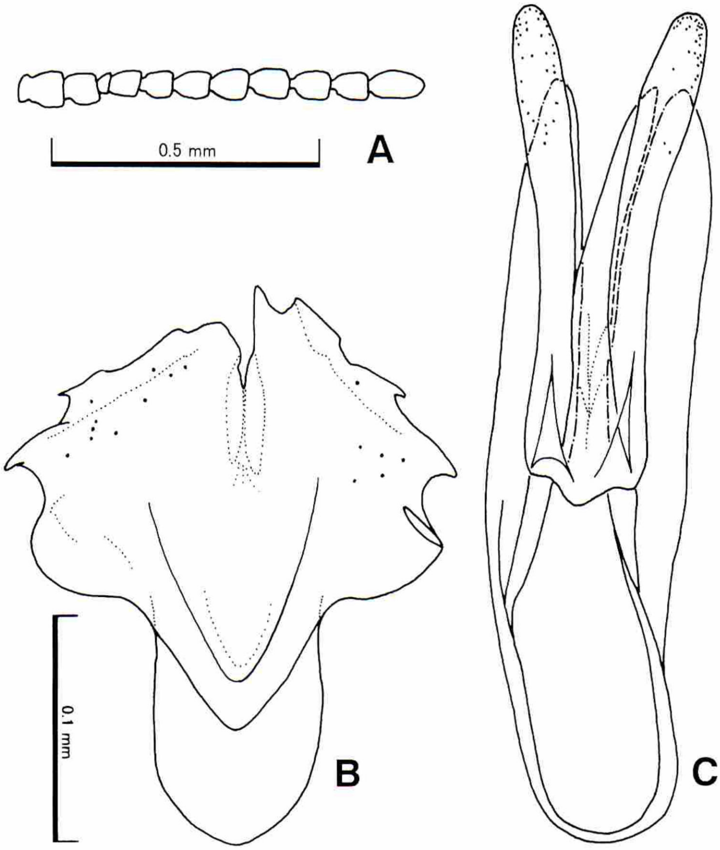


Fig. 7. *Hydrocyphon triforius* sp. nov., paratype, male. ——— A, Antenna; B, tegmen; C, penis. Scales: 0.5 mm for A, 0.1 mm for B, C.

Head large, almost flat in dorsal surface, finely punctate. Eyes moderate in size, gently prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae short and stout; approximate ratio of each antennal segment (n = 1) as 2.7 : 2.3 : 1.0 : 2.0 : 2.0 : 2.3 : 2.3 : 2.7 : 2.7 : 2.3 : 3.6. Pronotum transverse, depressed above in lateral parts, finely punctate; antero-lateral corners obtuse; front and lateral margins almost straight; postero-lateral corners right-angled; posterior margin gently bisinuate; PW/PL 2.44–2.83 (2.64). Scutellum moderate in size, subtriangular, strongly punctate. Elytra oval, broadest at about proximal 1/3 of elytra, strongly punctate; EL/EW 1.09–1.18 (1.14); EL/PL 4.06–5.10 (4.58); EW/PW 1.41–1.65 (1.53); TL/EW 1.31–1.47 (1.39). Legs relatively long and slender.

Tergites and sternites VIII–IX broken. Tegmen small, lightly sclerotized; basal part short, subparallel-sided; parameres short, sparsely punctate, projecting laterally in the middle part. Penis small, moderately sclerotized, about 1.5 times as long as tegmen, almost symmetrical; pala oblong; trigonium composed three projections; lateral ones long, sparsely covered with fine punctures, with rounded apex; middle one short, with pointed apex; parameroids broad, shorter than three projections of trigonium, with rounded apices.

Female. Unknown.

Measurement. Male (n = 2): TL 1.62 and 1.83 mm; PW 0.78 and 0.85 mm; PL 0.30 and 0.32 mm; EW 1.10 and 1.40 mm; EL 1.30 and 1.53 mm.

Distribution. Malaysia, Thailand.

Remarks. This species is distinguishable from the other members of the *renati* species-group by the large trigonium composed of three projections.

Etymology. The species name refers to the shape of trigonium composed of three projections.

Hydrocyphon thailandicus sp. nov.

(Figs. 1F, 8)

Type material. Holotype (NSMT): 1 ♂, "[North THAI] Maeo Khun Klang 1,350 m, Doi Inthanon 17. X. 1983 M. SAKAI." Paratypes (EUM, NSMT, NMW): 1 ♂, same data as for the holotype; 2 ♂♂, same locality and collector, but 20–X–1983, genit. s. no. HY 802; 1 ♂, same locality and collector, but 21–X–1983.

Description. Male. Body oblong, slightly convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown; legs light brown.

Head moderate in size, slightly convex above, finely punctate. Eyes moderate in size, prominent; the distance between eyes about 2.3 times as long as the maximum diameter of an eye. Antennae stout, reaching about proximal 1/4 of elytra; approximate ratio of each antennal segment (n = 1) as 3.3 : 2.0 : 1.0 : 3.3 : 3.3 : 3.6 : 4.0 : 3.6 : 3.6 : 4.0 : 5.3. Pronotum transverse, depressed above in lateral parts, finely and closely punctate; antero-lateral corners obtuse; front and lateral margins almost straight; postero-lateral corners right-angled; posterior margin arcuate; PW/PL 2.24–2.60 (2.43). Scutellum moderate in size, subtriangular, punctate as in pronotum. Elytra oblong-oval, convex above, subparallel-sided near base to apical 1/3, punctate as in pronotum; EL/EW 1.29–1.46 (1.36); EL/PL 4.47–5.00 (4.73); EW/PW 1.36–1.47 (1.43); TL/EW 1.55–1.78 (1.65). Legs somewhat slender.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines in posterior part, with a pair of short apodemes; sternite VIII lightly

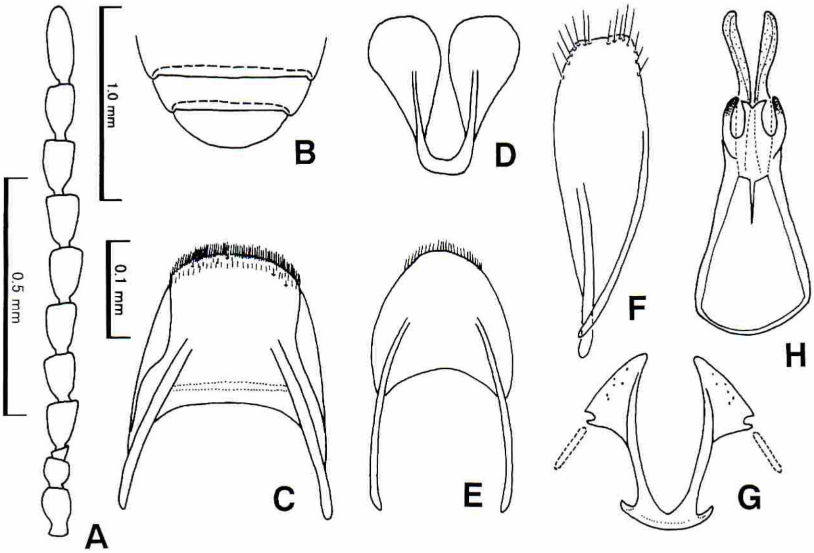


Fig. 8. *Hydrocyphon thailandicus* sp. nov., paratype, male. ——— A, Antenna; B, sternites V–VII; C, tergite VIII; D, sternite VIII; E, tergite IX; F, sternite IX; G, tegmen; H, penis. Scales: 0.5 mm for A; 1.0 mm for B, 0.1 mm for C–H.

sclerotized, U-shaped; tergite IX lightly sclerotized, semicircular, bearing short spines on apical margin, with a pair of long and slender apodemes protruding from near antero-lateral corners; sternite IX lightly sclerotized, oblong, bearing short setae along apical margin. Tegmen well sclerotized, relatively long, sparsely punctate in apical part of parameres. Penis well sclerotized, about 1.8 times as long as tegmen, slender; anterior margin of pala gently arcuate; parameroids relatively long and slender, curved postero-laterally, sparsely covered with fine punctures in apical part.

Female. Unknown.

Measurement. Male (n = 4): TL 2.05–2.13 (2.09) mm; PW 0.85–0.91 (0.89) mm; PL 0.35–0.38 (0.37) mm; EW 1.20–1.32 (1.27) mm; EL 1.70–1.75 (1.73) mm.

Distribution. Thailand.

Remarks. This species is closely related to *Hydrocyphon wakaharai* YOSHITOMI et SATÔ known from Laos and the following species, but differs from them by the shape of penis with anterior margin of para arcuate.

Etymology. The species is named after the type locality.

Hydrocyphon nepalensis sp. nov.

(Figs. 1G, 9)

Type material. Holotype (BLKU): 1 ♂, "July 18, 1972, Y. NISHIDA leg. Kyushu Univ. Col./ (E. NEPAL) Basantapur (2,300 m), 27°07'N, 87°24'E", genit. s. no. HY 806. Paratypes (BLKU, EUM, NSMT): 3 ♂♂, same data as for the holotype, genit. s. nos. HY 794, 795, 808.

Description. Male. Body oblong, slightly convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown; legs light brown.

Head moderate in size, slightly convex above, finely punctate. Eyes moderate in size,

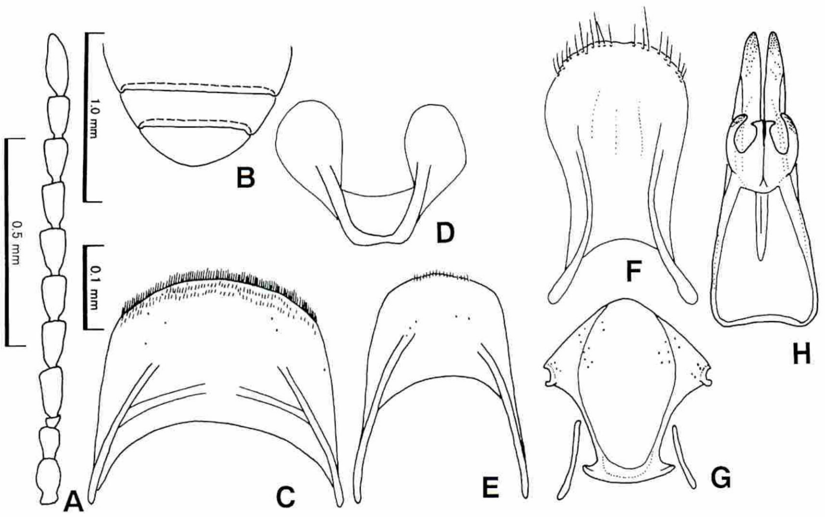


Fig. 9. *Hydrocyphon nepalensis* sp. nov., holotype, male. ——— A, Antenna; B, sternites V–VII; C, tergite VIII; D, sternite VIII; E, tergite IX; F, sternite IX; G, tegmen; H, penis. Scales: 0.5 mm for A, 0.1 mm for B; 0.1 mm for C–H.

prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae stout, reaching about proximal 1/4 of elytra; approximate ratio of each antennal segment (n = 1) as 3.7 : 2.3 : 1.0 : 4.0 : 3.7 : 3.7 : 3.7 : 3.7 : 3.7 : 3.3 : 5.0. Pronotum transverse, depressed above in lateral parts, finely and closely punctate; antero-lateral corners obtuse; front and lateral margins almost straight; postero-lateral corners right-angled; posterior margin arcuate; PW/PL 2.50. Scutellum moderate in size, subtriangular, punctate as in pronotum. Elytra oblong-oval, convex above, subparallel-sided near base to apical 1/3, punctate as in pronotum; EL/EW 1.50; EL/PL 5.13; EW/PW 1.37; TL/EW 1.79. Legs somewhat slender.

Female. Unknown.

Measurement. Male (n = 1): TL 2.33 mm; PW 0.95 mm; PL 0.38 mm; EW 1.30 mm; EL 1.95 mm.

Distribution. Nepal.

Remarks. Judging from the male genitalia, this species is closely related to *Hydrocyphon thailandicus* sp. nov., but differs from it in having the following characters: antennae short and stout; tegmen somewhat longer; penis relatively stout, with almost straight anterior margin; parameroids wide and straight.

Etymology. The species is named after the type locality.

Hydrocyphon jaechi Yoshitomi et Klausnitzer, 2003

Hydrocyphon jaechi Yoshitomi et Klausnitzer, 2003: 526.

Additional material examined. 1♂, 1♀ (NMW), "CHINA: Guangdong Prov. Dinghu Nat. Res., 23°11'03"N, 112°33'06"E, 29. 10. 2001, ca. 20–30 m, Jäch and Komarek (CWBS 453)", genit. s. nos. HY 762, 779.

Distribution. China.

Hydrocyphon deflexicollis species-group

See YOSHITOMI et KLAUSNITZER (2003).

Hydrocyphon kachinensis sp. nov.

(Figs. 1H, 10)

Type material. Holotype (NMW): 1♂, "MALAYSIA: Kachin State ca. 12 km S Putao, 31. 5. 1999 W Mularshidi vill., 500–550 m 27°15.13'N 97°24.95'E leg. SCHILHAMMER and SCHUH (60)", genit. s. no. HY 888.

Description. Male. Body oblong-oval, convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown; pronotum, antennal segments I–V and legs yellowish brown.

Head moderate in size, slightly convex above, covered closely with fine punctures. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye; clypeus long, almost straight in front margin. Antennae (missing in IX–XI) relatively short and stout. Pronotum transverse, depressed above in lateral parts, punctate as in head; antero- and postero-lateral corners obtuse; front and lateral margins straight; posterior margin gently arcuate; PW/PL 2.67. Scutellum relatively small, subtriangular. Elytra oval, convex above, broadest at the middle, closely and finely punctate; EL/EW 1.33; EL/PL 5.33; EW/PW 1.50; TL/EW 1.53. Legs slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, covered with minute setae and spines in apical part; sternite VIII membranous; tergite IX lightly sclerotized, transverse, with a pair of short apodemes; sternite IX lightly sclerotized, bearing short setae in apical part. Tegmen large, well sclerotized; basal part wide, ovate; parameres rela-

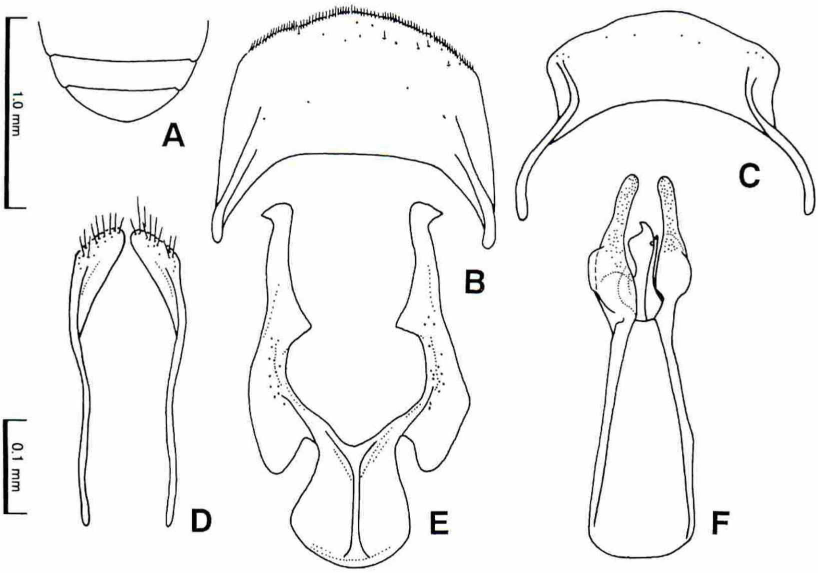


Fig. 10. *Hydrocyphon kachinensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

tively slender, projecting triangularly in the middle part of inner margin, curved laterally and pointed at apices, sparsely punctate in proximal part; antero-lateral corners of parameres projecting and ovate. Penis as long as tegmen, well sclerotized, slightly asymmetrical; pala subtriangular, symmetrical; trigonium distinctly asymmetrical, left projection longer and larger than right one; median plate indistinct; parameroids short, stout, closely covered with fine punctures, obtuse at apices.

Female. Unknown.

Measurement. Male (n = 1): TL 1.90 mm; PW 0.80 mm; PL 0.30 mm; EW 1.20 mm; EL 1.60 mm.

Distribution. Myanmar.

Remarks. This is very remarkable species in having strange-shaped tegmen and penis, and its affinity is unknown.

Etymology. The species is named after the type locality.

Hydrocyphon lusonensis sp. nov.

(Figs. 1I, 11)

Type material. Holotype (NMW): 1♂, "leg. JÄCH (18) PHILIPPINEN – Luson, W Los Banos, 25. 11. 1992. Rainbow falls". Paratype (NMW): 1♂, same data as for the holotype, genit. s. no. HY 885.

Description. Male. Body oval, strongly convex above, shining, closely covered with short setae throughout. Coloration of body black; lateral part of pronotum narrowly pale brown.

Head moderate in size, slightly convex above, finely punctate. Eyes moderate in size, slightly prominent; the distance between eyes about 2.3 times as long as the maximum diameter of an eye. Antennae short and stout. Pronotum transverse, slightly depressed above in lateral parts; antero- and postero-lateral corners obtuse; front margin straight; lateral and posterior margins gently arcuate; PW/PL 2.37–2.75 (2.56). Scutellum relatively small, subtriangular. Elytra

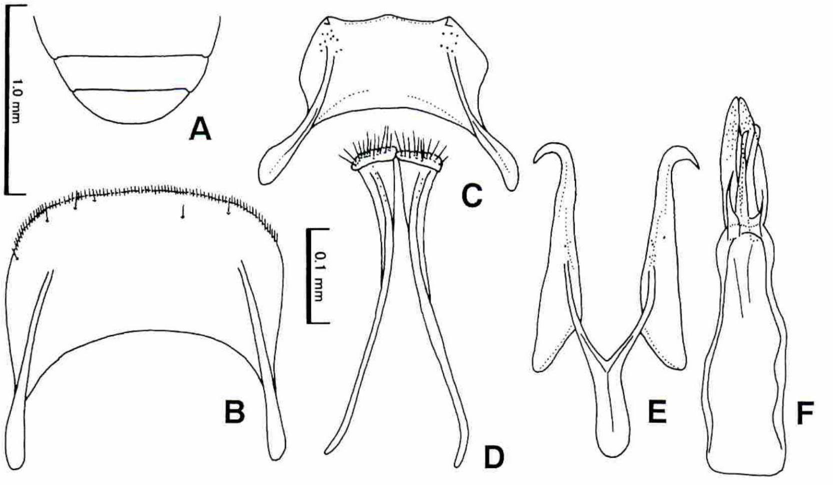


Fig. 11. *Hydrocyphon lusonensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

oval, strongly convex above, broadest at proximal 1/3; EL/EW 1.11–1.23 (1.17); EL/PL 3.93–5.00 (4.47); EW/PW 1.48–1.50 (1.49); TL/EW 1.39–1.48 (1.43).

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines along apical margin, with a pair of relatively long apodemes; sternite VIII membranous; tergite IX lightly sclerotized, trapezoidal, almost straight in apical margin, triangularly upturned in postero-lateral corners, with a pair of stout apodemes; sternite IX lightly sclerotized, long, bearing short setae in apical part. Tegmen moderately sclerotized, slender; basal part slender, subparallel-sided; parameres slender, curved laterally and pointed at apices; antero-lateral corners of parameres projecting anteriorly. Penis moderately sclerotized, long, about 1.1 times as long as tegmen, asymmetrical; pala oblong, bisinuate in lateral margins; trigonium consisting of two slender projections; median plate indistinct; parameroids almost symmetrical, longer than trigonium, sparsely covered with minute punctures, obtuse at apices.

Female. Unknown.

Measurement. Male (n = 2): TL 1.88 and 1.92 mm; PW 0.88 and 0.90 mm; PL 0.32 and 0.38 mm; EW 1.30 and 1.35 mm; EL 1.50 and 1.60 mm.

Distribution. The Philippines (Luzon).

Remarks. This is very remarkable species in having strange-shaped tegmen and penis, and its affinity is unknown.

Etymology. The species is named after the type locality.

Hydrocyphon subrotundus sp. nov.

(Figs. 1J, 12)

Type material. Holotype (NSMT): 1♂, "[North Thai] Maeo Khun Klang 1,350 m Doi Inthanon, 21. X. 1983, M. SAKAI", genit. s. no. HY 805. Paratypes (NMW, EUM, NSMT): 3♂♂, "N–THAILAND, 19–26. 6. 1989 18°32'N, 98°32'E, Doi Inthanon, 1,200 m, Bang Khun Klang, Malicky and Chantaramongkol"; 4♂♂, "NW THAILAND Doi Inthanon, 1,200 m Bang Khun Klang, 98°32'E, 18°32N / 16–23. 1. 1990, MALICKY and CHANTARAMONGKOL"; 1♂, "NW THAILAND, Doi Inthanon, 120 m Bang Khun Klang, 98°32'E, 18°32N / 9–16. 1. 1990, MALICKY and CHANTARAMONGKOL".

Description. Male. Body semicircular, strongly convex above, shining, closely covered with short setae throughout. Coloration of body brown to blackish brown.

Head moderate in size, almost flat in dorsal surface, finely punctate; clypeus rather long, with front margin gently arcuate. Eyes moderate in size, strongly prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae short and slender, reaching about proximal 1/4 of elytra. Pronotum strongly transverse, slightly depressed above in lateral parts, punctate as in head; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners almost right-angled; posterior margin gently arcuate; PW/PL 2.55–2.83 (2.67). Scutellum relatively large, equilateral-triangular. Elytra rotundate, strongly convex above, broadest at proximal 1/3, punctate as in head; humeral parts indistinct; EL/EW 1.15–1.25 (1.20); EL/PL 4.66–5.38 (5.01); EW/PW 1.55–1.59 (1.57); TL/EW 1.40–1.49 (1.44). Legs relatively short, slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines at posterior margin, covered closely with minute setae and spines in poste-

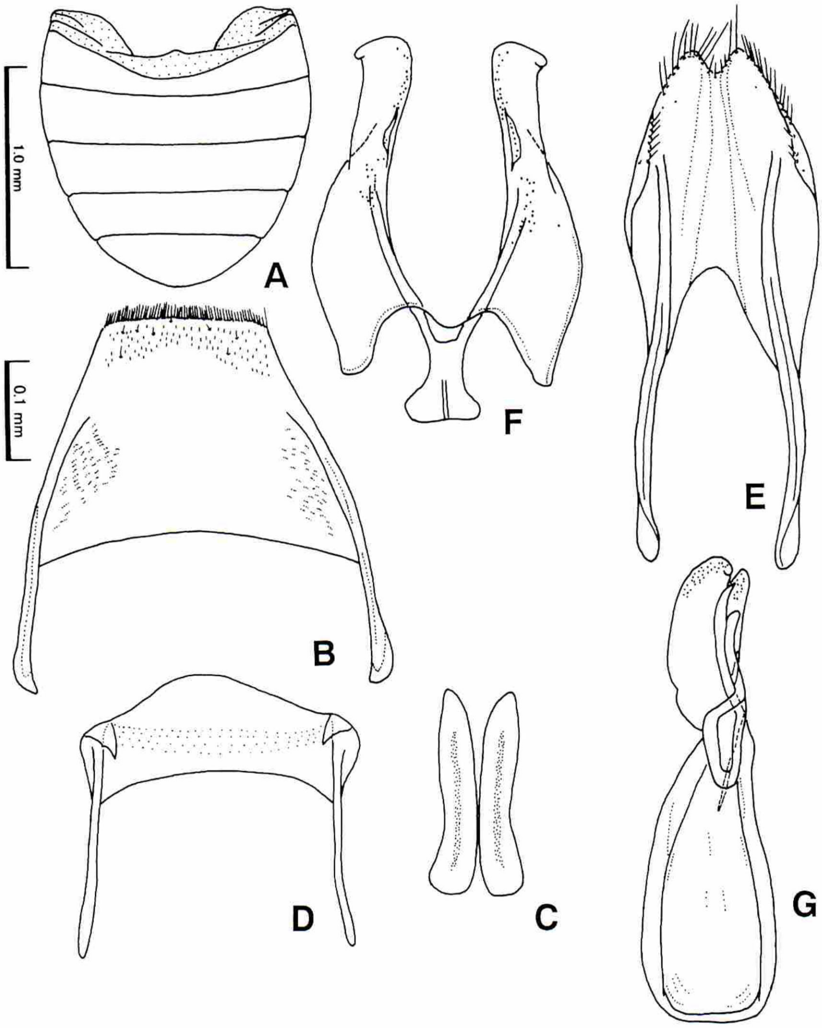


Fig. 12. *Hydrocyphon subrotundus* sp. nov., holotype, male. ——— A, Sternite III–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

rior part, with a pair of long apodemes protruding from antero-lateral corners; sternite VIII weakly sclerotized, oblong; tergite IX lightly sclerotized, but well sclerotized in apodemes, transverse, upturned in postero-lateral corners; sternite IX moderately sclerotized, bearing long setae along posterior margin, with a pair of long and stout apodemes. Tegmen large, well sclerotized; basal part short, subtriangular; parameres broad, subparallel-sided in apical part, with nipple-like projections in postero-lateral corners, upturned trapezoidally in apical 1/3 of inner margin; antero-lateral corners of parameres wide and clearly projecting. Penis large, well sclerotized, asymmetrical; pala subtriangular, widest at the base, almost straight in anterior margin; parameroids distinctly asymmetrical, right one broad and large, left one short and slender; trigonium composed of two projections; median plate present.

Female. Unknown.

Measurement. Male (n = 5): TL 2.49–2.68 (2.57) mm; PW 1.12–1.16 (1.14) mm; PL

0.40–0.45 (0.43) mm; EW 1.78–1.80 (1.79) mm; EL 2.05–2.25 (2.14) mm.

Distribution. Thailand.

Remarks. This species is closely related to *Hydrocyphon forficulatus* NYHOLM, 1981 known from Myanmar, but is distinguished from it by the shape of tegmen with interior margin upturned and posterior part of penis more rounded.

Etymology. The species name refers to the semicircular body shape.

Hydrocyphon subcelatus sp. nov.

(Figs. 1K, 13)

Type material. Holotype (NMW): 1♂, "NE-INDIA: Meghalaya W Garo Hills Nokrek NP; ca. 1,100 m / 25°29.6'N, 90°19.5'E, 9–17. 5. 1996, leg. JENDEK and SAUSA", genit. s. no. HY 895. Paratypes (NMW, EUM, NSMT): 6♂♂, same data as for the holotype.

Description. Male. Body oblong, slightly convex above, shining, closely covered with short setae throughout. Coloration of body almost black; antennal segments I–IV, lateral margin of pronotum and legs pale brown.

Head moderate in size, slightly convex above, finely punctate; clypeus rather long, almost straight in front margin. Eyes moderate in size, strongly prominent; the distance between eyes about 1.9 times as long as the maximum diameter of an eye. Antennae (missing in X–XI) relatively stout and short. Pronotum transverse, depressed above in lateral parts, punctate as in head; front margin almost straight; antero-lateral corners obtuse; lateral margins gently arcuate; postero-lateral corners right-angled; posterior margin gently bisinuate; PW/PL 2.26–2.83 (2.54). Scutellum moderate in size, subtriangular, punctate as in head. Elytra oblong-oval, convex above, broadest at just before the middle, punctate as in head; EL/EW 1.32–1.38 (1.34); EL/PL 4.34–5.33 (4.76); EW/PW 1.36–1.43 (1.39); TL/EW 1.58–1.70 (1.63). Legs relatively short and

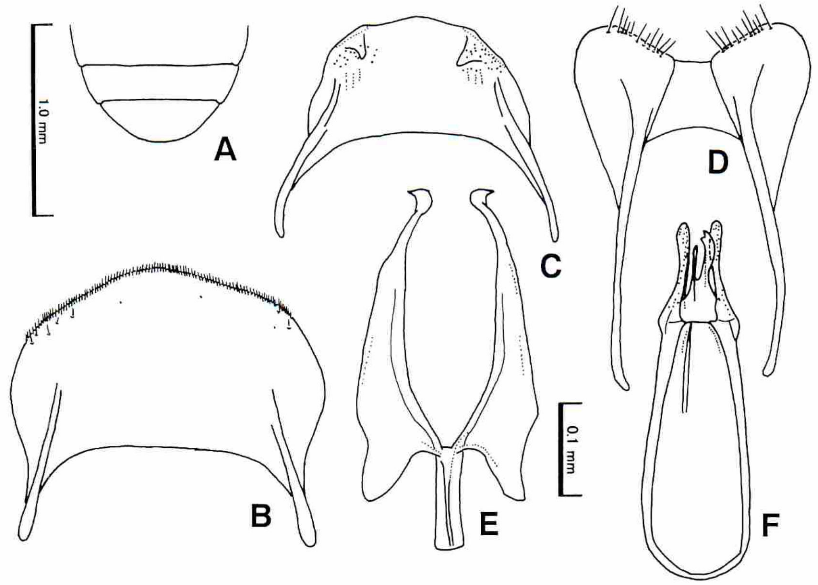


Fig. 13. *Hydrocyphon subcelatus* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short setae and spines along apical margin; tergite IX moderately sclerotized, trapezoidal, triangularly upturned and punctate in postero-lateral corners; sternite IX lightly sclerotized, bearing short setae on apical margin. Tegmen moderately sclerotized; basal part short and slender, subparallel-sided; parameres long and slender, curved laterally and somewhat expanded in apical part; antero-lateral corners of parameres projecting widely. Penis as long as tegmen, asymmetrical; pala oblong, broadest just before anterior margin; parameroids short, closely covered with fine punctures, obtuse at apices; trigonium a little shorter than parameroids, consisting of two projections, left one short and straight, right one long and somewhat stout, bidentate at apex.

Female. Unknown.

Measurement. Male (n = 5): TL 1.90–2.04 (1.98) mm; PW 0.85–0.90 (0.87) mm; PL 0.30–0.38 (0.35) mm; EW 1.20–1.25 (1.22) mm; EL 1.58–1.68 (1.63) mm.

Distribution. India.

Remarks. Similar to *Hydrocyphon celatus* KLAUSNITZER, 1980 known from India (high altitude) in the shape of penis, but differs from it in having the slender and long parameres of tegmen.

Etymology. The species name refers to the similarity with *Hydrocyphon celatus* KLAUSNITZER.

Hydrocyphon kinabalensis species-group

This species-group is defined by the following characteristics of male genitalia: tergite VIII trapezoidal; sternite VIII membranous; tergite IX with a pair of long apodemes; sternite IX consisting of a pair of hemisternites; tegmen small, moderately sclerotized; basal part relatively long; parameres indistinct, clearly projecting in lateral parts; lateral plates very long; penis asymmetrical; para oblong, subparallel-sided; parameroids distinctly asymmetrical; trigonium and median plate indistinct. This species-group is related to *pallidicollis* species-group in having asymmetric penis, and also to *renati* species-group in the characterized shape of tegmen. But it differs from them in having the indistinct trigonium.

Hydrocyphon kinabalensis sp. nov.

(Figs. 1L, 14)

Type material. Holotype (NSMT): 1 ♂, "(EAST MALAYSIA) Park Headquarters near Mt. Kinabalu Sabah, (Alt. 1,700 m) III – 25, 1979, Shinji NAGAI leg.", genit. s. no. HY 914.

Description. Male. Body oblong-oval, convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown; but lateral margins of pronotum paler.

Head moderate in size, slightly convex above, finely punctate. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae slender. Pronotum strongly transverse, slightly depressed above in lateral parts, punctate as in head; front margin almost straight; antero-lateral corners obtuse; lateral and posterior margins gently arcuate; postero-lateral corners almost right-angled; PW/PL 2.66. Scutel-

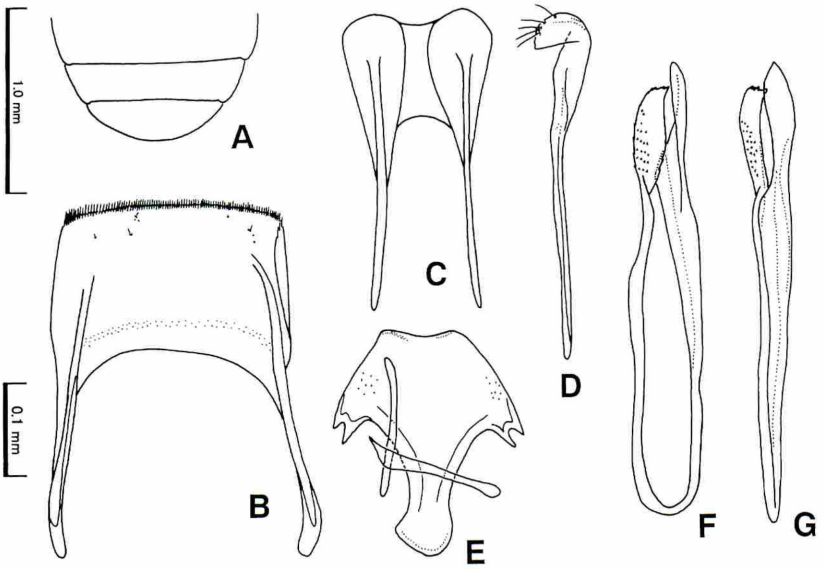


Fig. 14. *Hydrocyphon kinabalensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis, ventral view; G, penis, lateral view. Scales: 1.0 mm for A, 0.1 mm for B–G.

lum relatively large, equilateral-triangular, punctate as in pronotum. Elytra oval, convex above, broadest at the middle, closely punctate; EL/EW 1.26; EL/PL 5.20; EW/PW 1.56; TL/EW 1.50.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines along apical margin, with a pair of long apodemes; sternite VIII membranous; tergite IX lightly sclerotized, with a pair of long apodemes; sternite IX consisting of a pair of hemisternites, lightly sclerotized, bearing some short setae in apical part. Tegmen small, moderately sclerotized; basal part relatively long; parameres indistinct, clearly projecting in lateral parts; lateral plates very long. Penis long, well sclerotized, asymmetrical, about 1.9 times as long as tegmen; pala oblong, subparallel-sided; parameroids distinctly asymmetrical, left one wide, serrate in apical part, right one plate-liked; trigonium and median plate indistinct.

Female. Unknown.

Measurement. Male (n = 1): TL 2.17 mm; PW 0.93 mm; PL 0.35 mm; EW 1.45 mm; EL 1.82 mm.

Distribution. Malaysia.

Remarks. This species is very remarkable in having strange male genitalia.

Etymology. The species is named after the type locality.

***Hydrocyphon pallidicollis* species-group**

See YOSHITOMI and KLAUSNITZER (2003).

Hydrocyphon palawanensis sp. nov.

(Figs. 1M, 15)

Type material. Holotype (NSMT): 1♂, "[PALAWAN] Olanguan (0 m) 76 km N. of

Puerto Prin-cesa, 26. VIII. 1985, M. SAKAI leg.", genit. s. no. HY 383.

Description. Male. Body oblong-oval, slightly convex above, shining, closely covered with short setae throughout. Coloration of body pale brown throughout.

Head almost flat in dorsal surface; clypeus rather short. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae (missing in X–XI) stout, relatively long. Pronotum transverse; front and lateral margins almost straight; antero-and postero-lateral corners almost right-angled; posterior margin gently arcuate; PW/PL 2.37. Elytra oval, slightly convex above, broadest at the middle; EL/EW 1.30; EL/PL 5.47; EW/PW 1.78; TL/EW 1.54.

Apical margin of sternite VII arcuate. Tergites and sternites VIII–IX broken; sternite IX with a pair of long apodemes. Tegmen large, well sclerotized, basal part relatively long and stout, subparallel-sided in proximal part; parameres long and stout, with two pairs of denticulate small projections at apex, with rounded antero-lateral corners projecting antero-laterally. Penis well sclerotized, small, about 0.8 times as long as tegmen, asymmetrical; pala oblong, widest at proximal 1/8, gently tapered posteriad; parameroids asymmetrical, simple, obtuse at apices, right one longer than left one; trigonium with one rod-like projection protruding posteriorly, with long median plate.

Measurement. Male (n = 1): TL 2.46 mm; PW 0.90 mm; PL 0.38 mm; EW 1.60 mm; EL 2.08 mm.

Distribution. The Philippines (Palawan).

Remarks. This species is related to the following four species, and diagnostic characters between these species appear mainly in the shapes of parameres.

Etymology. The species is named after the type locality.

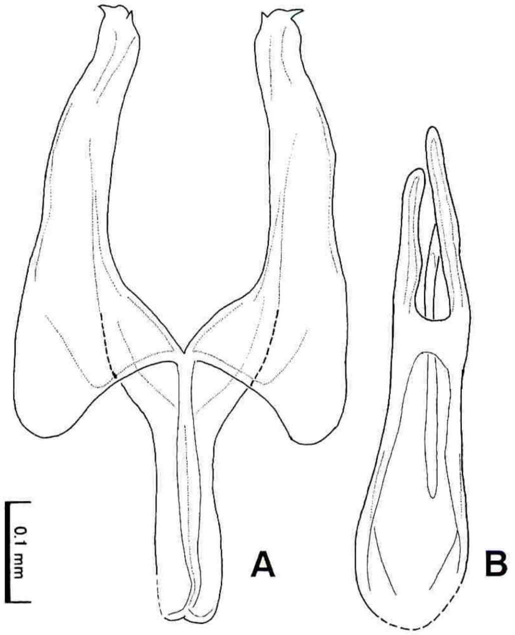


Fig. 15. *Hydrocyphon palawanensis* sp. nov., holotype, male. ——— A, Tegmen; B, penis.

Hydrocyphon javanicus sp. nov.

(Figs. 1N, 16)

Type material. Holotype (NSMT): 1 ♂, "(INDONESIA) Cibodas, alt. 1,400 m Mt. Gede, Jawa Barat, 19. VII. 1977, Shinji NAGAI leg.", genit. s. no. HY 815. Paratypes (EUM, NSMT): 2 ♂♂, same locality and collector as for the holotype, but 27–VII–1977, genit. s. no. HY 814.

Description. Male. Body oblong-oval, slightly convex above, shining, closely covered with short setae throughout. Coloration of body pale brown throughout.

Head almost flat in dorsal surface; clypeus rather short. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae stout, relatively long. Pronotum transverse; front and lateral margins almost straight; antero- and postero-lateral corners almost right-angled; posterior margin gently arcuate; PW/PL 2.56–2.63 (2.59). Elytra oval, slightly convex above, broadest at the middle; EL/EW 1.33; EL/PL 5.26–5.56 (5.41); EW/PW 1.50–1.63 (1.57); TL/EW 1.57–1.59 (1.58).

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, wide, covered

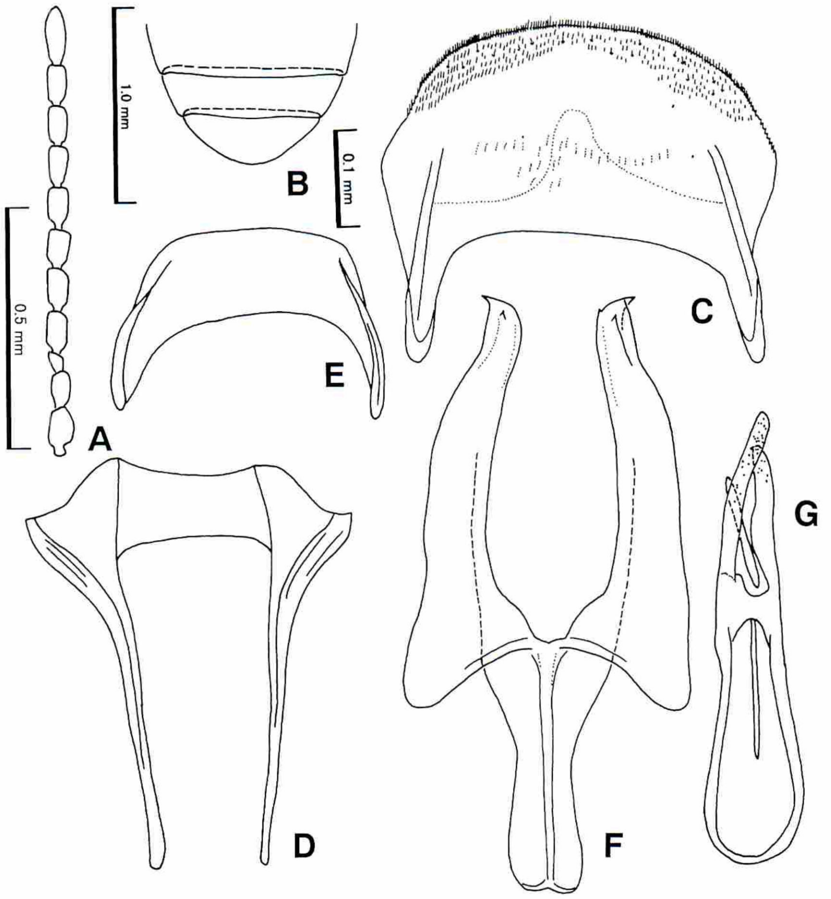


Fig. 16. *Hydrocyphon javanicus* sp. nov., holotype, male. ——— A, Antenna; B, sternite V–VII; C, tergite VIII; D, sternite IX; E, tergite IX; F, tegmen; G, penis. Scales: 0.5 mm for A, 1.0 mm for B, 0.1 mm for C–G.

closely with short spines and sparsely with minute setae in apical part, covered sparsely with minute furrows in mesal part, with a pair of short and stout apodemes protruding from near antero-lateral corners; sternite VIII membranous; tergite IX lightly sclerotized, small, U-shaped; sternite IX well sclerotized in apodemes, but widely membranous in mesal part. Tegmen moderately sclerotized, large; basal part long and stout, gently tapered posteriad in proximal 1/5, then expanded laterally in caudal part; parameres long, stout, with two or three pairs of small denticulate projections in apical parts; antero-lateral corners of parameres rounded, distinctly projecting antero-laterally. Penis moderately sclerotized, small, about 0.8 times as long as tegmen, asymmetrical; pala oblong, widest at about proximal 1/9, gently tapered posteriad; parameroids simple, right one longer than left one, sparsely punctate, with small denticulate projection in inner margin of apex of left one; trigonium with a rod-like long projection protruding posteriorly, with long median plate.

Female. Unknown.

Measurement. Male (n = 2): TL 2.36 and 2.38 mm; PW 0.92 and 1.00 mm; PL 0.36 and 0.38 mm; EW 1.50 mm; EL 2.00 mm.

Distribution. Indonesia (Java).

Remarks. This species is closely related to *Hydrocyphon palawanensis* sp. nov. in the general appearance and in the shapes of tegmen and penis, but differs from it in having the longer parameres and parameroids.

Etymology. The species is named after the type locality.

Hydrocyphon baliensis sp. nov.

(Figs. 1O, 17)

Type material. Holotype (NSMT): 1♂, "Batu Karu, Tabanan Bali, Indonesia, 29–IV–2000, M. SATÔ ", genit. s. no. HY 811. Paratype (EUM): 1♂, same data as for the holotype.

Description. Male. Body oblong-oval, slightly convex above, shining, closely covered with short setae throughout. Coloration of body pale brown throughout.

Head almost flat in dorsal surface; clypeus rather short. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae stout, relatively long. Pronotum transverse; front and lateral margins almost straight; antero- and postero-lateral corners almost right-angled; posterior margin gently arcuate; PW/PL 2.30–2.33 (2.31). Elytra oval, slightly convex above, broadest at the middle; EL/EW 1.36–1.38 (1.37); EL/PL 4.75–4.78 (4.76); EW/PW 1.48–1.52 (1.50); TL/EW 1.64–1.67 (1.66).

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, densely covered with short spines and sparsely with minute setae in postero-lateral part, covered with minute furrows in mesal part, with a pair of short and stout apodemes protruding from antero-lateral corners; sternite VIII membranous; tergite IX lightly sclerotized, U-shaped; sternite IX lightly sclerotized, consisting of a pair of hemisternites, sparsely covered with punctures in apical part, bearing some short setae in interior part, with a pair of long and slender apodemes protruding from near antero-lateral corners. Tegmen large, moderately sclerotized; basal part long and stout, subparallel-sided; parameres long and wide, gently tapered to apices, pointed at apices which are curved interiorly, with three pairs of denticulate projections situated in apical part of ventral surface; antero-lateral corners of parameres wide and rounded, distinctly project-

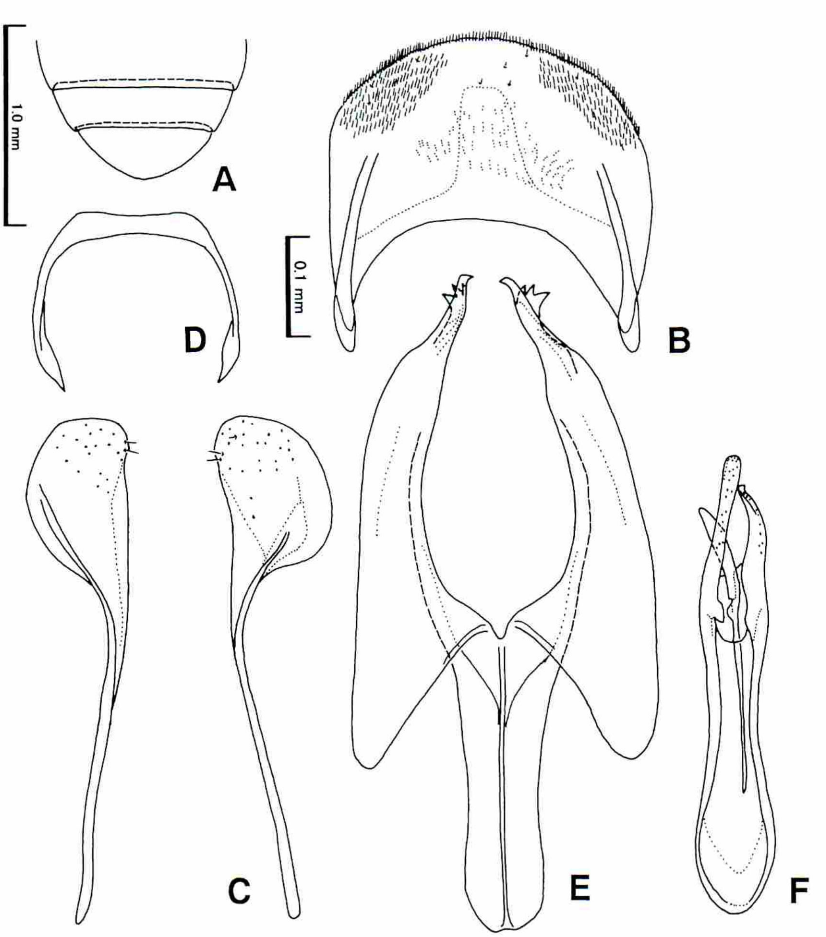


Fig. 17. *Hydrocyphon baliensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite IX; D, tergite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

ing antero-laterally. Penis moderately sclerotized, small, about 0.7 times as long as tegmen, asymmetrical; pala long, widest about proximal 1/6; parameroids short, right one longer than left one, sparsely punctate in apical part, curved interiorly in apical part of left one which have a small denticulate projection in lateral margin; trigonium indistinct, with a rod-like projection protruding posteriorly, with long median plate.

Female. Unknown.

Measurement. Male (n = 2): TL 2.30 and 2.31 mm; PW 0.92 and 0.93 mm; PL 0.40 mm; EW 1.38 and 1.40 mm; EL 1.90 and 1.91 mm.

Distribution. Indonesia (Bali).

Remarks. The general appearance and the coloration of this species are similar to those of the preceding two species, but the characteristics of male genitalia are related to the following species.

Etymology. The species is named after the type locality.

Hydrocyphon manfredi sp. nov.

(Figs. 1P, 18)

Type material. Holotype (NMW): 1 ♂, "INDONESIA: W Java Pangandaran Nat. P. 50 km

SE, Ciamis lg. SCHUH, 13–15.8.1994". Paratype (NMW): 1♂, "W–JAWA, 21.1.1987, Pangandaran, leg. JÄCH J13", genit. s. no. HY 889.

Description. Male. Body oval, strongly convex above, slightly shining, closely covered with short setae throughout. Coloration of head, mouth parts, antennal segments I–V, thorax and legs reddish brown, but tarsi somewhat fuscous; elytra and remaining antennal segments blackish brown.

Head relatively small, slightly convex above; clypeus rather short, with front margin almost straight. Eyes moderate in size, slightly prominent; the distance between eyes about 2.5 times as long as the maximum diameter of an eye. Antennae short and stout, reaching about proximal 1/6 of elytra. Pronotum strongly depressed above in lateral part; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners almost right-angled; posterior margin gently arcuate; PW/PL 2.66–2.75 (2.70). Scutellum relatively small, equilateral-triangular. Elytra oval, strongly convex above, broadest at the middle; EL/EW 1.25–1.29 (1.27); EL/PL 5.14–5.41 (5.27); EW/PW 1.51–1.57 (1.54); TL/EW 1.49–1.54 (1.51).

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, transversely trapezoidal, densely covered with short spines and sparsely with minute setae in posterior part,

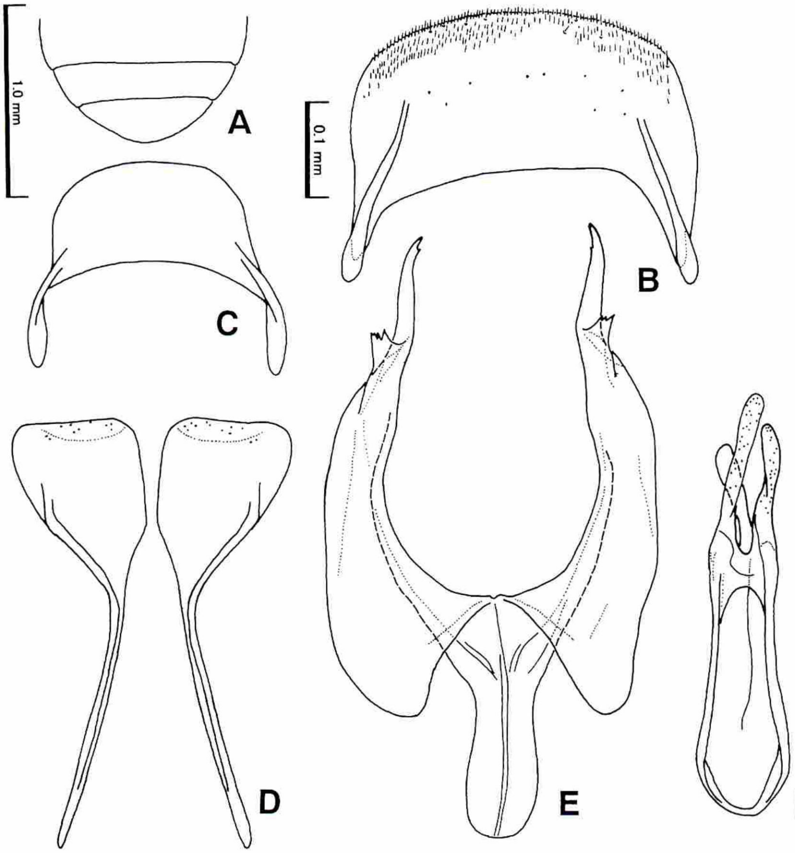


Fig. 18. *Hydrocyphon manfredi* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

with a pair of short apodemes protruding from antero-lateral corners; sternite VIII membranous; tergite IX lightly sclerotized, trapezoidal; sternite IX moderately sclerotized, consisting of a pair of hemisternites, sparsely punctate in posterior part. Tegmen large, moderately sclerotized; basal part short, subparallel-sided; parameres long, distinctly prolonged and tapered in apical parts, with denticulate projections in apical 1/3; antero-lateral corners of parameres wide and rounded. Penis small, moderately sclerotized, about 0.7 times as long as tegmen, asymmetrical; para long, widest about proximal 1/6; parameroids short, right one longer than left one, sparsely punctate in apical part, obtuse at apices; trigonium with one projection protruding posteriorly, indistinct in median plate.

Female. Unknown.

Measurement. Male (n = 2): TL 2.05 and 2.15 mm; PW 0.88 and 0.93 mm; PL 0.32 and 0.35 mm; EW 1.38 and 1.40 mm; EL 1.73 and 1.80 mm.

Distribution. Indonesia (Java).

Remarks. This species is closely related to *Hydrocyphon baliensis* sp. nov., but differs from it in having the shapes of parameres which are arcuate in lateral margins and distinctly prolonged apices.

Etymology. The epithet is named after Dr. Manfred JÄCH (NMW) who is a collector of the type material.

Hydrocyphon sarawakensis sp. nov.

(Figs. 2A, 19)

Type material. Holotype (NMW): 1 ♂, "MALAYSIA, Sarawak Mulu NP 3.3. 1993, leg. M. JÄCH (19)", genit. s. no. HY 898.

Description. Male. Body oval, strongly convex above, slightly shining, closely covered with short setae throughout. Coloration of head, mouth parts, antennal segments I–V, thorax and legs reddish brown, but tarsi somewhat fuscous; elytra and the remaining antennal segments blackish brown.

Head relatively small, slightly convex above; clypeus rather short, with front margin almost straight. Eyes moderate in size, slightly prominent; the distance between eyes about 2.5 times as long as the maximum diameter of an eye. Antennae short and stout, reaching about proximal 1/6 of elytra. Pronotum strongly depressed above in lateral part; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners almost right-angled; posterior margin gently arcuate; PW/PL 2.57. Scutellum relatively small, equilateral-triangular. Elytra oval, strongly convex above, broadest at the middle; EL/EW 1.20; EL/PL 5.14; EW/PW 1.67; TL/EW 1.43.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, transversely trapezoidal, densely covered with short spines and sparsely with minute setae in posterior part, covered with minute furrows in mesal part, with a pair of short apodemes; sternite VIII membranous; tergite IX lightly sclerotized, trapezoidal; sternite IX lightly sclerotized, almost membranous in posterior part, bearing short setae in apical part. Tegmen wide and large, moderately sclerotized; basal part short; parameres long, gently arcuate in lateral margins, covered with small denticulate projections in apical part, pointed at apices; antero-lateral corners of parameres wide and rounded. Penis small, moderately sclerotized, about 0.8 times as long as tegmen, asymmetrical; pala oblong, widest at proximal part; parameroids short, sparsely punc-

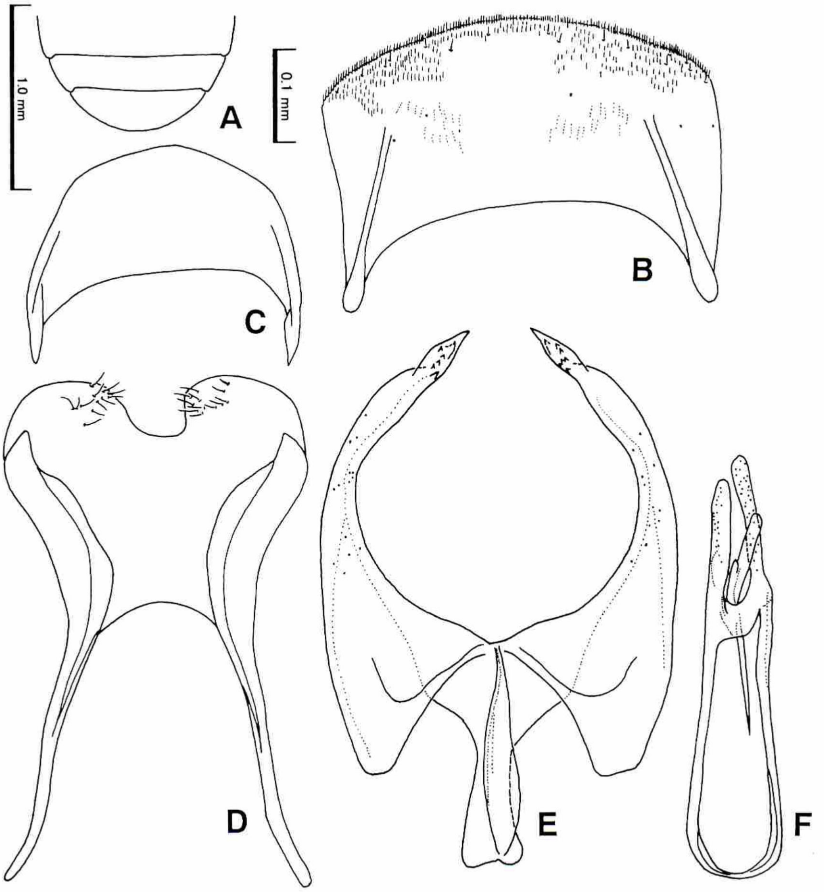


Fig. 19. *Hydrocyphon sarawakensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

tate in apical part, obtuse at apices; trigonium short, with a projection; median plate distinct.

Female. Unknown.

Measurement. Male (n = 1): TL 2.15 mm; PW 0.90 mm; PL 0.35 mm; EW 1.50 mm; EL 1.80 mm.

Distribution. Malaysia.

Remarks. The general appearance and coloration of this species are similar to those of *Hydrocyphon manfredi* sp. nov., but the following characteristics are different: tergite VIII more transverse; parameres more arcuate in lateral margin, with different shapes of apices; parameroids more slender.

Etymology. The species is named after the type locality.

Hydrocyphon kodadai sp. nov.

(Figs. 2B, 20)

Type material. Holotype (NMW): 1 ♂, "Philippines, Luzon: Lagunas, Mt. Makiling, stream near Mad Springs, 400–500 m, 19. XI. 1995, J. Kodada lgt.", genit. s. no. HY 845.

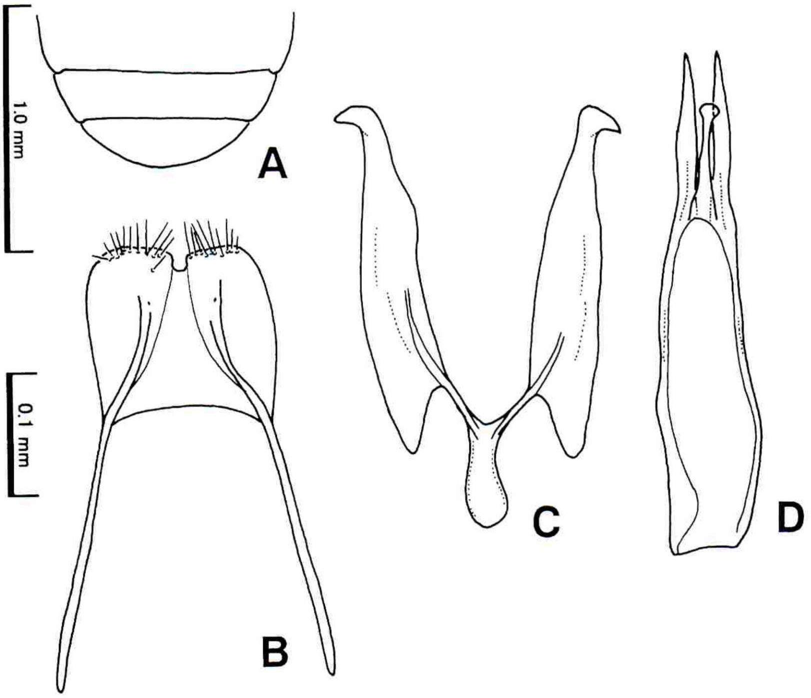


Fig. 20. *Hydrocyphon kodadai* sp. nov., holotype, male. ——— A, Sternites V–VII; B, sternite IX; C, tegmen; D, penis. Scales: 1.0 mm for A, 0.1 mm for B–D.

Description. Male. Body oval, slightly convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown; antennae, mouth parts, lateral parts of pronotum and legs pale brown, but antennal segments VII–XI infuscate.

Head slightly convex above, finely punctate, almost straight in front margin of clypeus. Eyes moderate in size, strongly prominent; the distance between eyes about 1.9 times as long as the maximum diameter of an eye. Antennae slender, reaching about proximal 1/4 of elytra. Pronotum punctate as in head, slightly depressed above in lateral parts; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners right-angled; posterior margin gently arcuate; PW/PL 2.10. Elytra rotundate, slightly convex above, broadest at just before the middle; humeral parts indistinct; EL/EW 1.01; EL/PL 3.20; EW/PW 1.40; TL/EW 1.43. Legs slender, relatively long.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, with a pair of short apodemes; sternite VIII membranous; tergite IX wide, lightly sclerotized, upturned in postero-lateral corners; sternite IX lightly sclerotized, bearing short setae in apical part, with a pair of long and slender apodemes. Tegmen lightly sclerotized, simple; basal part short and oblong; parameres slender, curved laterally and pointed at apices. Penis symmetrical, long, about 1.2 times as long as tegmen; pala oblong, with almost straight in front margin; parameroids short, almost straight, gently tapered apically; trigonium consisting of a short projection, with expanded and rounded apex; median plate indistinct.

Female. Unknown.

Measurement. Male (n = 1): TL 2.10 mm; PW 1.05 mm; PL 0.50 mm; EW 1.47 mm; EL 1.60 mm.

Distribution. The Philippines (Luzon).

Remarks. This is a very remarkable species in having unique shaped trigonium which is expanded and rounded at apex.

Etymology. The species is named after Dr. Ján KODADA of the Comenius University, a collector of the holotype.

Hydrocyphon palniensis sp. nov.

(Figs. 2C, 21)

Type material. Holotype (NMW): 1♂, "INDIA: Tamil Nadu, 11.1.1999, Palni Hills, 10°14'N, 77°29'E, Kodaikanal, Near Shola Falls 2,100 m, leg. BOUKAL (57)", genit. s. no. HY 905. Paratype (NMW): 1♂, "INDIA: Tamil Nadu, 12.1.1999, Palni Hills, 10°16'N 77°33'E Perumalmalai, 1,600 m, leg. D. BOUKAL (61)", genit. s. no. HY 915.

Description. Male. Body oblong-oval, convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown; lateral margin of pronotum, antennal segments I–IV and legs pale brown.

Head slightly convex above, finely punctate, gently arcuate in front margin of clypeus. Eyes moderate in size, strongly prominent; the distance between eyes about 2.3 times as long as the maximum diameter of an eye. Antennae stout, reaching about proximal 1/4 of elytra. Pronotum punctate as in head, slightly depressed above in lateral parts; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners right-angled; posterior margin gently bisinuate; PW/PL 2.00–2.43 (2.21). Scutellum moderate in size, punctate as in head. Elytra oval, convex above, broadest at the middle; EL/EW 1.33–1.37 (1.35); EL/PL 4.00–5.09 (4.54); EW/PW 1.50–1.53 (1.51); TL/EW 1.64–1.67 (1.65). Legs slender, relatively long.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines along posterior margin, sparsely covered with short setae in apical part,

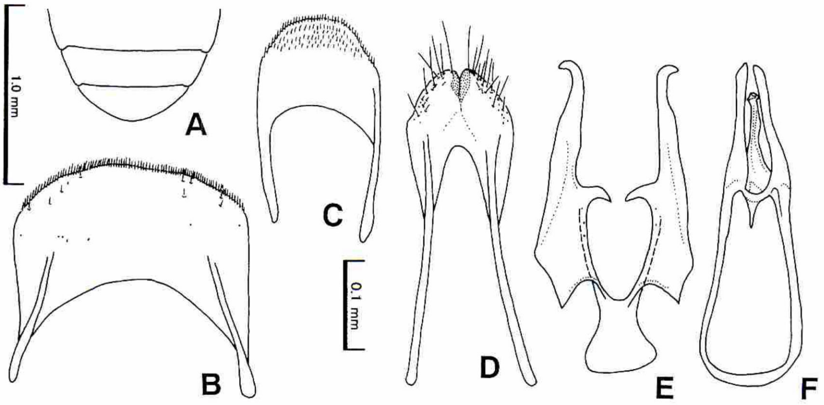


Fig. 21. *Hydrocyphon palniensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

with a pair of relatively long apodemes; tergite IX lightly sclerotized, closely covered with minute spines in apical part, with a pair of long apodemes; sternite IX moderately sclerotized, but well sclerotized in mesal part of posterior margin, bearing irregular setae in apical part, with a pair of long and slender apodemes. Tegmen moderately sclerotized; basal part broad, widest at the base; parameres relatively long, gently tapered posteriad, curved laterally in apical part, with large hook-like projections on mesal part of interior margins; antero-lateral corners of parameres short. Penis moderately sclerotized, slightly asymmetrical, as long as tegmen; pala oblong, widest at the base; parameroids almost straight, with somewhat pointed apices; trigonium consisting of a long projection, shorter than parameroids, expanded and serrate minutely at apex; median plate short.

Female. Unknown.

Measurement. Male (n = 2): TL 2.00 and 2.13 mm; PW 0.80 and 0.85 mm; PL 0.35 and 0.40 mm; EW 0.80 and 0.85 mm; EL 1.60 and 1.78 mm.

Distribution. India.

Remarks. This is a remarkable species. The diagnostic characters of this species are as follows: sternite IX well sclerotized in apical part, mesal part of inner margin of parameres projecting, apex of trigonium expanded and minutely serrate.

Etymology. This species is named after the type locality.

Hydrocyphon chiangmaiensis sp. nov.

(Figs. 2D, 22)

Type material. Holotype (NMW): 1♂, "NW-THAILAND, Chiang Mai (Zoo), 9–16. 5. 1988, leg. MALICKY (Licht)". Paratypes (NMW, EUM, NSMT): 1♂, "NW-THAIL.: Chiang Mai, 98°57'E 18°49'N, Zoo, 14–21. 11. 1988, MALICKY and CHANTARAMONGKOL LF", genit. s. no. HY 830; 3♂♂, "N-THAILAND, 10–17. 4. 1989, 18°49'N, 98°67'E, Chiang Mai, Zoo (Licht), leg. CHANTARAMONGKOL and MALICKY".

Description. Male. Body oval, strongly convex above, shining, closely covered with short setae throughout. Coloration of body almost brown, but head and pronotum paler.

Head slightly depressed above, finely punctate. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Pronotum punctate as in head, slightly depressed above in lateral parts; front margin almost straight; antero-lateral corners obtuse, lateral and posterior margins gently arcuate; postero-lateral corners almost right-angled; PW/PL 2.38–2.69 (2.55). Scutellum relatively large, equilateral-triangular, punctate as in head. Elytra oval, convex above, broadest at just before the middle; humeral parts indistinct; EL/EW 1.18–1.22 (1.21); EL/PL 4.30–4.86 (4.57); EW/PW 1.44–1.51 (1.48); TL/EW 1.44–1.49 (1.47).

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines along apical margin; sternite VIII lightly sclerotized, V-shaped; tergite IX lightly sclerotized, with a pair of slender apodemes; sternite IX moderately sclerotized, rod-like hemisternites, bearing short setae in apical part. Tegmen large, moderately sclerotized; basal part relatively long, gently tapered anteriad; parameres long, simple, curved interiorly in apical part, projecting distinctly in antero-lateral corners. Penis relatively large, well sclerotized, asymmetrical, about 0.9 times as long as tegmen; pala oblong, subparallel-sided; parameroids rela-

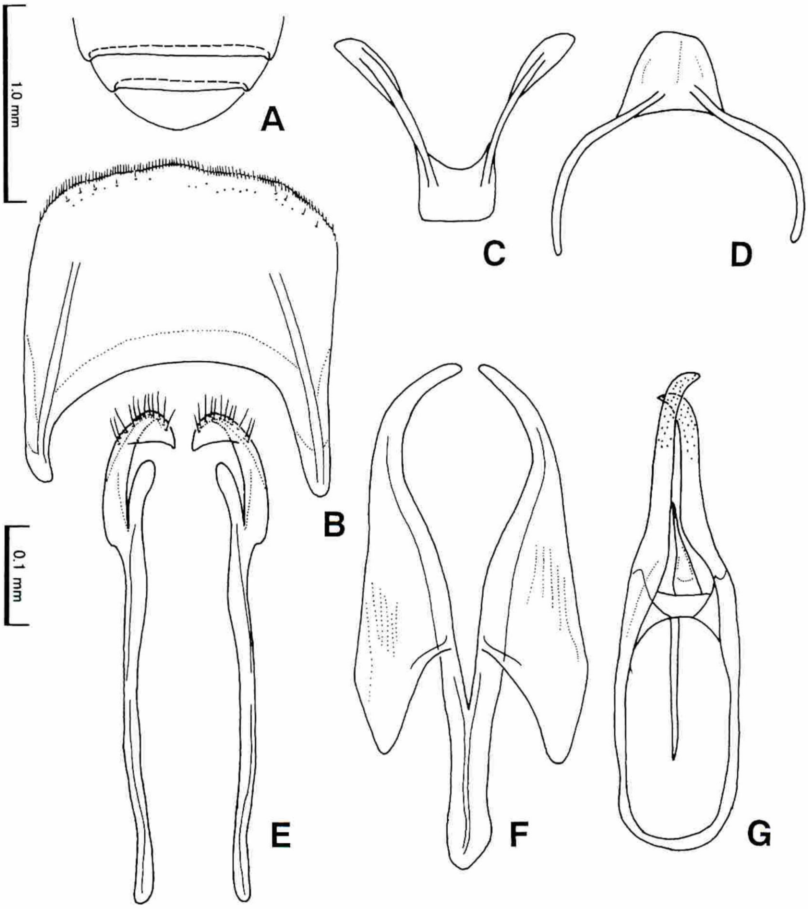


Fig. 22. *Hydrocyphon chiangmaiensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

tively long, asymmetrical, gently curved and punctate in apical parts, pointed at apices, right one shorter than left one; trigonium indistinct, consisting of a short projection, with long median plate.

Female. Unknown.

Measurement. Male (n = 4): TL 1.93–2.13 (2.06) mm; PW 0.90–0.98 (0.94) mm; PL 0.35–0.40 (0.37) mm; EW 1.30–1.48 (1.40) mm; EL 1.58–1.75 (1.69) mm.

Distribution. Thailand.

Remarks. This new species is similar to *Hydrocyphon guangxiensis* YOSHITOMI and KLAUSNITZER known from China, but differs from it in having the shapes of tegmen and penis.

Etymology. The species is named after the type locality.

Hydrocyphon sumatrensis sp. nov.

(Figs. 2E, 23)

Type material. Holotype (NMW): 1 ♂ (teneral), "SUMATRA–Aceh, 1990, Louser NP, 30 km NW Kutacane (18) leg. JÄCH 23. 2.", genit. s. no. HY 880. Paratype (NMW): 1 ♂, "MALAYSIA: Perak, Belum Exp. B. Camp, 21. 3. – 14. 4. 1994, 5°30'07"N 101°26'21"E, 250 m light trap, leg. I. SIVEC".

Description. Male. Body semicircular, strongly convex above, slightly shining, closely covered with short setae throughout. Coloration of body almost pale brown, but antennal segments VII–XI, scutellum and elytra blackish brown in paratype.

Head almost flat in dorsal surface, finely punctate. Eyes moderate in size, prominent; the distance between eyes about 2.3 times as long as the maximum diameter of an eye. Antennae short, relatively stout, reaching about proximal 1/5 of elytra. Pronotum punctate as in head, depressed above in lateral parts; front margin almost straight; antero- and postero-lateral corners obtuse; lateral and posterior margins gently arcuate; PW/PL 2.43–2.63 (2.53). Scutellum small, equilateral-triangular. Elytra rotundate, strongly convex above, broadest at the middle; humeral parts indistinct; EL/EW 1.05–1.06 (1.05); EL/PL 4.80–4.86 (4.83); EW/PW 1.74–1.89 (1.81); TL/EW 1.27–1.28 (1.27). Tergite VII with a pair of short apodemes.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, wide, trapezoidal, bearing short spines and setae in apical part; sternite VIII almost membranous; tergite IX lightly sclerotized, U-shaped; sternite IX lightly sclerotized, consisting of a pair of hemitergites, bearing short setae in apical part. Tegmen large, well sclerotized; basal part short; parameres very slender, curved laterally in apical part, serrate in lateral margin of apices, with a pair of lightly sclerotized plates in basal parts. Penis lightly sclerotized, long, as long as tegmen, asymmetrical; pala gently tapered anteriad; trigonium very short, consisting of a small projection; parameroids long, asymmetrical, finely punctate, obtuse at apices.

Female. Unknown.

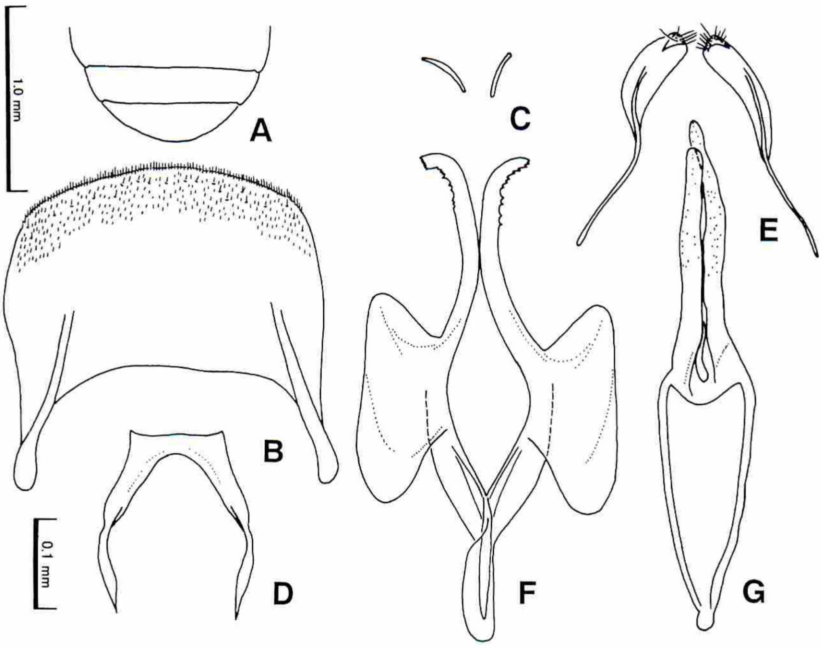


Fig. 23. *Hydrocyphon sumatrensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

Measurement. Male (n = 2): TL 2.03 and 2.17 mm; PW 0.90 and 0.92 mm; PL 0.35 and 0.37 mm; EW 1.60 and 1.70 mm; EL 1.68 and 1.80 mm.

Distribution. Indonesia (Sumatra).

Remarks. This species is very remarkable in having strange shapes of tegmen and penis.

Etymology. The species is named after the type locality.

Hydrocyphon malaysianus sp. nov.

(Figs. 2F, 24)

Type material. Holotype (NMW): 1 ♂, "Malaysia, Johor, Tioman Island Tekek env., small stream in dense primary forest, 24. VI. 2001, J. F. Kočiam lgt.", genit. s. no. HY 840. Paratypes (NMW): 2 ♂♂, same data as for the holotype.

Description. Male. Body oblong-oval, slightly convex above, slightly shining, closely covered with short setae throughout. Coloration of body pale brown; antennal segments VII–XI, maxillary palpi and tarsi infuscate.

Head slightly convex above, finely punctate. Eyes large, strongly prominent; the distance between eyes about 1.8 times as long as the maximum diameter of an eye. Antennae short and stout, reaching about proximal 1/5 of elytra. Pronotum covered closely with fine punctures, slightly depressed above in lateral parts; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners right-angled; posterior margin gently arcuate; PW/PL 2.40–2.80 (2.55). Scutellum small, equilateral-triangular. Elytra oval, convex above, broadest at the middle; humeral parts indistinct; EL/EW 1.29–1.37 (1.32); EL/PL 4.73–5.52 (5.02); EW/PW 1.44–1.53 (1.49); TL/EW 1.55–1.65 (1.59).

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, bearing short spines in apical part with a pair of short apodemes; tergite IX lightly sclerotized, upturned in antero-lateral corners; sternite IX lightly sclerotized, bearing short setae in antero-

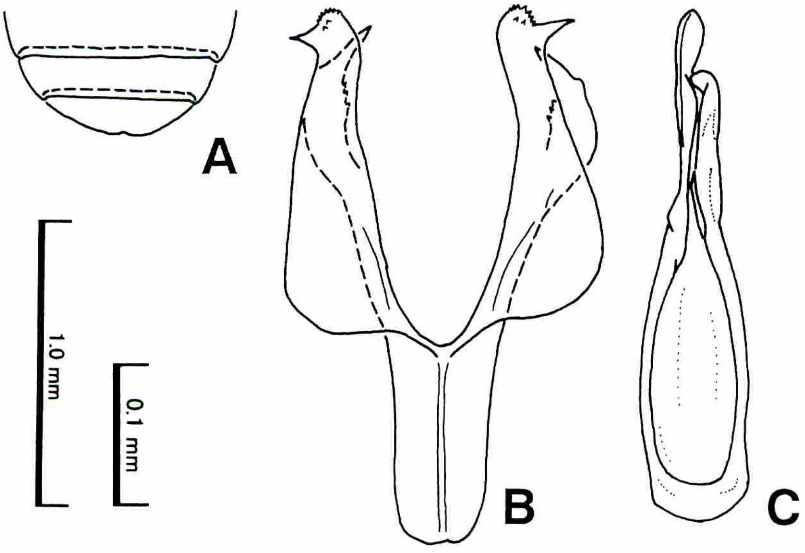


Fig. 24. *Hydrocyphon malaysianus* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tegmen; C, penis. Scales: 1.0 mm for A, 0.1 mm for B, C.

lateral corners, with a pair of long apodemes. Tegmen relatively small, moderately sclerotized; basal part wide, gently tapered anteriad; parameres relatively short and wide, serrate in apices, bi-denticulate in outer margin near apices, rounded and not projecting at antero-lateral corners, with a pair of large projections arising from apical 1/3 of dorsal part, gently curved interiorly and pointed at apices. Penis small, moderately sclerotized, asymmetrical, about 0.9 times as long as tegmen; pala oblong, widest at proximal 1/4; trigonium small, composed of a projection; parameroids asymmetrical, left one longer than right one, with rounded apices.

Female. Unknown.

Measurement. Male (n = 3): TL 1.57–1.72 (1.64) mm; PW 0.66–0.72 (0.69)mm; PL 0.25–0.30 (0.27) mm; EW 0.95–1.10 (1.03) mm; EL 1.30–1.42 (1.37) mm.

Distribution. Malaysia.

Remarks. This species is closely related to the following species, and the diagnostic characters are mentioned in the remarks of *H. submalaysianus* sp. nov.

Etymology. The species is named after the type locality.

Hydrocyphon submalaysianus sp. nov.

(Figs. 2G, 25)

Type material. Holotype (NMW): 1♂, "Prov. PAHANG (19) Fraser Hill, 10. 2. 1992, Jeriau Wf. 950 m / MALAYSIA, leg. SCHILLHAMMER", genit. s. no. HY 903.

Description. Male. Body oblong-oval, slightly convex above, slightly shining, closely covered with short setae throughout. Coloration of body pale brown; antennal segments VII–XI, maxillary palpi and tarsi infuscate.

Head slightly convex above, finely punctate. Eyes large, strongly prominent; the distance between eyes about 1.8 times as long as the maximum diameter of an eye. Antennae short and stout, reaching about proximal 1/5 of elytra. Pronotum closely covered with fine punctures,

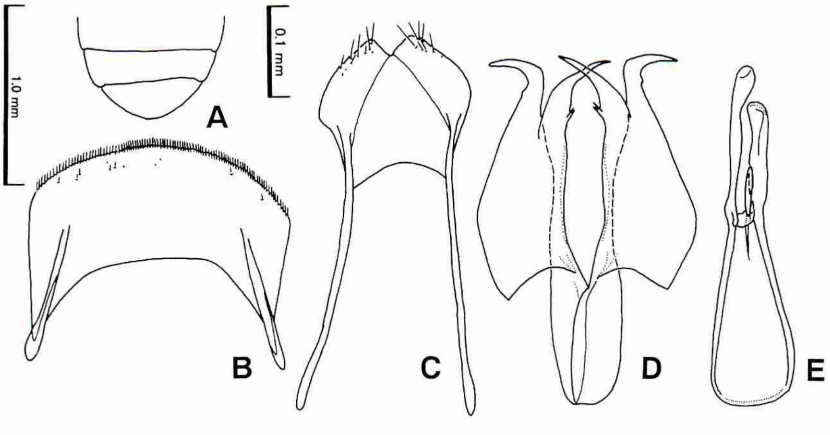


Fig. 25. *Hydrocyphon submalaysianus* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite IX; D, tegmen; E, penis. Scales: 1.0 mm for A, 0.1 mm for B–E.

slightly depressed above in lateral parts; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners right-angled; posterior margin gently arcuate; PW/PL 2.67. Scutellum small, equilateral-triangular. Elytra oval, convex above, broadest at the middle; humeral parts indistinct; EL/EW 1.36; EL/PL 4.90; EW/PW 1.35; TL/EW 1.64.

Female. Unknown.

Measurement. Male (n = 1): TL 1.77 mm; PW 0.80 mm; PL 0.30 mm; EW 1.08 mm; EL 1.47 mm.

Distribution. Malaysia.

Remarks. This species is closely related to *Hydrocyphon malaysianus* sp. nov., but the following male genital characteristics are different: apex of sternite VII arcuate, apical part of parameres of tegmen lacking serrae in interior margin, shapes of parameroids of penis.

Etymology. The species name refers to the similarity with *Hydrocyphon malaysianus* sp. nov.

Hydrocyphon boukali sp. nov.

(Figs. 2H, 26)

Type material. Holotype (NMW): 1 ♂, "INDIA: Kerala, 5. 1. 1999, 10 km WSW Munnar, 1,000 m Kallar Valley, 10°03'N, 76°58'E, leg. D. BOUKAL (45)", genit. s. no. HY 856. Paratype (NMW): 1 ♂, "INDIA: Tamil Nadu, 16. 1. 1999 Palni Hills, 10°16'N, 77°35'E Kodaikanal – Batlagundurd. Machur env., 1,200 m, leg. D. BOUKAL (68)".

Description. Male. Body oblong-oval, convex above, shining, closely covered with short setae throughout. Coloration of body blackish brown, but pronotum and legs reddish brown. Head slightly convex above, finely punctate, with almost straight front margin of clypeus. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Pronotum slightly depressed above in lateral parts, punctate as in head; front and lateral margins straight; antero-lateral corners right-angled; posterior margin gently arcuate; PW/PL 2.50–2.67 (2.58). Scutellum relatively small. Elytra oval, convex above, broadest at the middle; humeral parts indistinct; EL/EW 1.29–1.38 (1.33); EL/PL 4.93–5.07 (5.00); EW/PW 1.43–1.48 (1.45); TL/EW 1.54–1.66 (1.60).

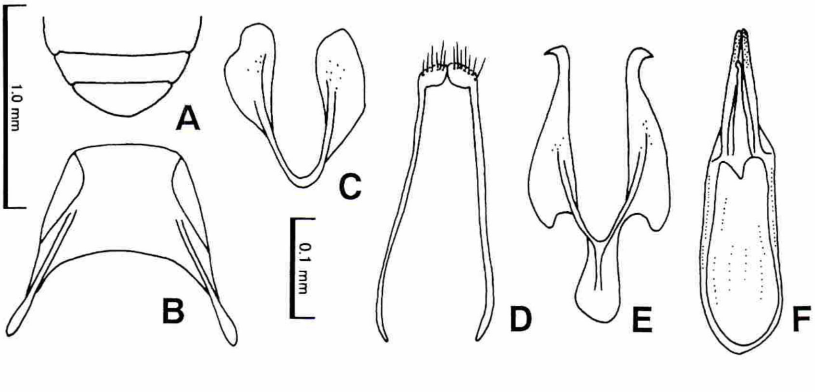


Fig. 26. *Hydrocyphon boukali* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite VIII; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, trapezoidal; sternite VIII lightly sclerotized, U-shaped; tergite IX lightly sclerotized, trapezoidal; sternite IX lightly sclerotized, bearing short setae in apical part, with a pair of long apodemes. Tegmen large, moderately sclerotized; basal part short, oblong; parameres slender, curved laterally and pointed at apices; antero-lateral corners somewhat projecting. Penis moderately sclerotized, about 1.2 times as long as tegmen, symmetrical; pala long, subparallel-sided near base to apex; trigonium consisting of a long and slender projection, pointed and projecting dorsally at apex; parameroids slender and simple, a little longer than trigonium, finely punctate, obtuse at apices.

Female. Unknown.

Measurement. Male (n = 2): TL 1.66 and 1.82 mm; PW 0.70 and 0.80 mm; PL 0.28 and 0.30 mm; EW 1.00 and 1.18 mm; EL 1.38 and 1.52 mm.

Distribution. India.

Remarks. This is a remarkable species in having the strange shaped tegmen and penis.

Etymology. The species is named after Dr. David BOUKAL of the South Bohemian University who is a collector of the holotype.

Hydrocyphon sagaingensis sp. nov.

(Figs. 2I, 27)

Type material. Holotype (NMW): 1♂, "MYANMAR: Sagaing Division, Alaungdaw Katthapa NP, 22°19.094'N, 94°28.823'E / 9–10. 5. 2003, ca. 350 m leg. BOUKAL *et al.* (118)", genit. s. no. HY 897. Paratypes (NMW, NSMT, EUM): 4♂♂, 4♀♀, same data as for the holotype, genit. s. nos. HY 884, 907; 1♂, 1♀, "MYANMAR: Sagaing Division, Alaungdaw Katthapa NP 22°18.560'N 94°27.679'E / 6. 5. 2003, ca. 400 m, leg. BOUKAL *et al.* (111)", female genit. s. no. HY 886.

Description. Male. Body oblong-oval, convex above, shining, closely covered with short setae throughout. Coloration of body almost black, pronotum reddish brown, antennal segments I–VII, labrum and legs (except for infuscate tarsi) yellowish brown.

Head slightly convex above, with almost straight front margin of clypeus, finely punctate. Eyes moderate in size, strongly prominent; the distance between eyes about 2.1 times as long as the maximum diameter of an eye. Antennae short, reaching about proximal 1/5 of elytra. Pronotum depressed above in lateral parts, punctate as in head; front and lateral margins straight; antero-lateral corners obtuse, almost 120°; postero-lateral corners right-angled; posterior margin gently arcuate; PW/PL 2.43–2.58 (2.51). Scutellum relatively small. Elytra oval, strongly convex above, broadest at just before the middle; humeral parts somewhat distinct; EL/EW 1.18–1.29 (1.22); EL/PL 4.17–4.50 (4.32); EW/PW 1.38–1.45 (1.42); TL/EW 1.46–1.57 (1.50). Legs slender.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, semicircular, bearing short spines along apical margin, with a pair of short apodemes; sternite VIII widely membranous, ginkgo-leaf shaped; tergite IX lightly sclerotized, trapezoidal, sparsely covered with fine punctures near postero-lateral corners; sternite IX lightly sclerotized, bearing short setae in apical part. Tegmen relatively stout, moderately sclerotized; basal part short and

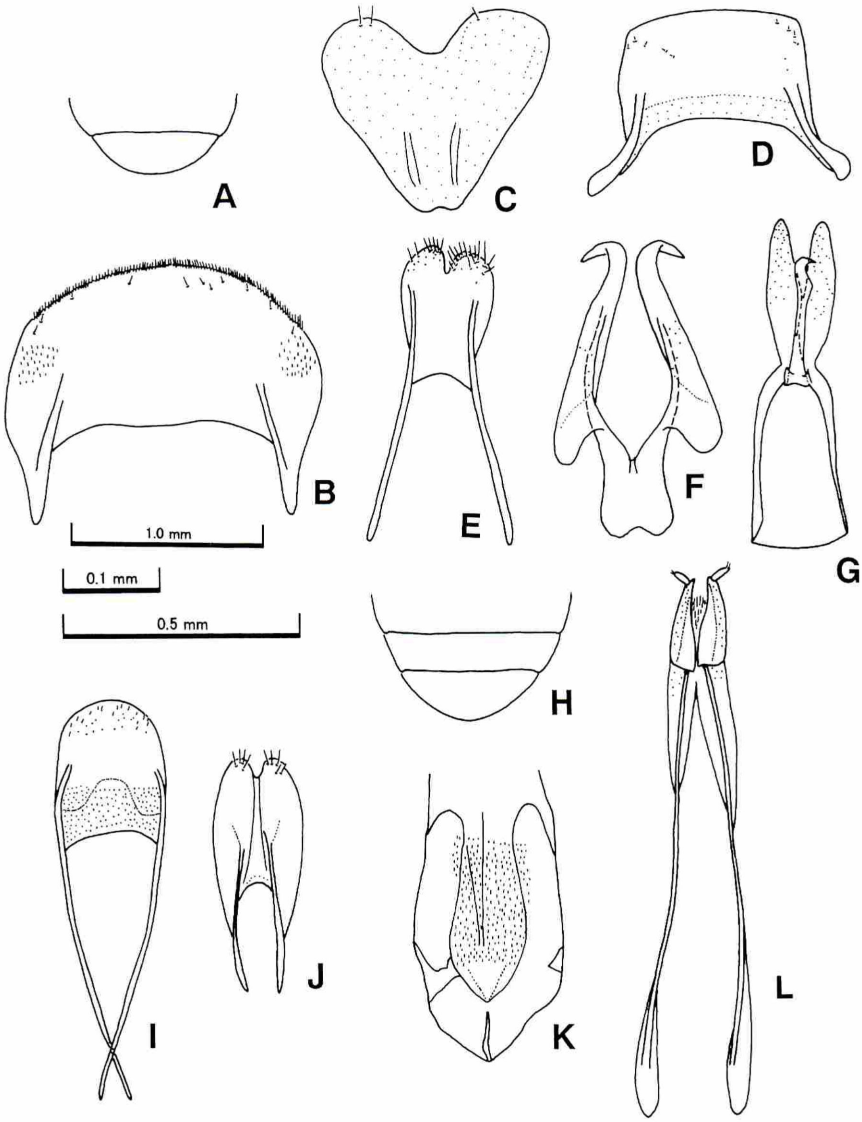


Fig. 27. *Hydrocyphon sagaingensis* sp. nov. ——— A–G: Male, holotype; A, Sternites VI–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. H–L: female, paratype; H, sternites V–VII; I, tergite VIII; J, sternite VIII; K, prehensor; L, ovipositor. Scales: 1.0 mm for A and H; 0.1 mm for B–G, K; 0.5 mm for I–J, L.

wide, subparallel-sided, concave in apical margin; parameres slender, curved laterally and pointed at apices; antero-lateral corners of parameres projecting and ovate. Penis small, moderately sclerotized, almost as long as tegmen, symmetrical; pala subparallel-sided, almost straight in front margin; parameroids plate-liked, short, finely punctate, with obtuse apices; trigonium with a projection, a little shorter than parameroids, hook-liked in apical part; median plate indistinct.

Female. Almost as in male, but coloration of pronotum infuscate; antennae short and slender; PW/PL 2.42–2.81 (2.59); EL/EW 1.23–1.33 (1.30); EL/PL 4.47–5.16 (4.81); EW/PW 1.39–1.53 (1.43); TL/EW 1.48–1.60 (1.57).

Measurement. Male (n = 6): TL 2.01–2.20 (2.13) mm; PW 0.97–1.03 (1.00) mm; PL 0.38–0.42 (0.40) mm; EW 1.35–1.48 (1.42) mm; EL 1.63–1.80 (1.73) mm. Female (n = 5): TL 1.97–2.20 (2.08) mm; PW 0.90–1.00 (0.93) mm; PL 0.32–0.40 (0.36) mm; EW 1.25–1.40 (1.33) mm; EL 1.65–1.80 (1.72) mm.

Distribution. Myanmar.

Remarks. This is a remarkable species in having the strange shaped tegmen and penis.

Etymology. The species is named after the type locality.

Hydrocyphon dispar sp. nov.

(Figs. 2J, 28)

Type material. Holotype (NMW): 1 ♂, "W–THAILAND, Tham Tharn Lot NP N. Kanchanaburi (2), leg. JÄCH 27. 11. 1990", genit. s. no. HY 872. Paratype (NMW): 1 ♂, "W–THAILAND, 1990, Tham Tharn Lot NP, N. Kanchanaburi (3), leg. JÄCH 28–29. 11.", genit. s. no. HY 871.

Description. Male. Body oblong, slightly convex above, shining, closely covered with yellowish white setae throughout. Coloration of body blackish brown, but pronotum, antennal segments I–V and legs yellowish brown.

Head slightly convex above, finely punctate, with gently arcuate front margin of clypeus. Eyes moderate in size, strongly prominent; the distance between eyes about 1.8 times as long as the maximum diameter of an eye. Antennae short, relatively stout, reaching about proximal 1/4 of elytra. Pronotum slightly depressed above in lateral parts, punctate as in head; front and lateral margins straight; antero-lateral corners obtuse, almost 120°; postero-lateral corners right-angled; posterior margin gently bisinuate; PW/PL 2.50–2.67. Scutellum relatively small. Elytra oval, convex above, broadest at the middle, closely punctate; EL/EW 1.30–1.35; EL/PL

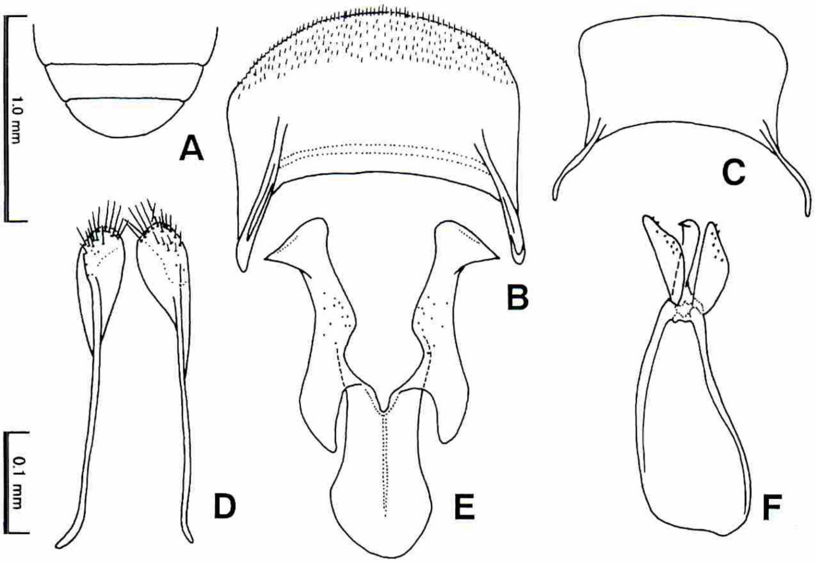


Fig. 28. *Hydrocyphon dispar* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

5.00–5.07; EW/PW 1.41–1.53; TL/EW 1.57–1.62. Legs slender.

Apical margin of sternite VII gently arcuate. Tergite VIII moderately sclerotized, wide, trapezoidal, bearing short spines and setae in apical part; sternite VIII membranous, bearing some short setae; tergite IX almost membranous, trapezoidal, with a pair of short apodemes; sternite IX moderately sclerotized, bearing short setae in apical part. Tegmen stout, well sclerotized; basal part long and stout, subparallel-sided; parameres relatively stout, projecting triangularly in lateral margin of just before apex, convex slightly in middle part of inner margin; antero-lateral corners clearly projecting. Penis moderately sclerotized, as long as tegmen, slightly asymmetrical; pala subtriangular, asymmetrical; trigonium short, projecting ventrally at apex; median plate indistinct; parameroids very short, as long as trigonium, about 0.3 times as long as parameres, subtriangular, sparsely covered with minute serrae and punctures in apical part.

Female. Unknown.

Measurement. Male (n = 2): TL 1.80 and 1.82 mm; PW 0.75 and 0.80 mm; PL 0.30 mm; EW 1.13 and 1.15 mm; EL 1.50 and 1.52 mm.

Distribution. Thailand.

Remarks. This is remarkable species in having the strange shaped tegmen and penis.

Etymology. The species name refers to the strange shapes of tegmen and penis.

Hydrocyphon spinosus sp. nov.

(Figs. 2K, 29)

Type material. Holotype (NMW): 1 ♂, "INDIA: Kerala, 2. 1. 1998 35 km NNE Trivandrum, 600 m Ponmudi, 08°46'N, 77°07'E, leg. D. BOUKAL (40)", genit. s. no. HY 899. Paratype (NMW): 1 ♂, same data as for the holotype.

Description. Male. Body oblong-oval, slightly convex above, slightly shining, closely covered with yellowish white setae throughout. Coloration of body blackish brown, but pronotum, mouth parts, antennal segments I–V and legs reddish brown.

Head large, slightly convex above, finely punctate, with straight front margin of clypeus. Eyes moderate in size, prominent; the distance between eyes about 2.2 times as long as the maximum diameter of an eye. Antennae short and stout, reaching about proximal 1/5 of elytra. Pronotum slightly depressed above in lateral parts, punctate as in head; front and lateral margins straight; antero- and postero-lateral corners almost right-angled; posterior margin gently arcuate; PW/PL 2.77. Scutellum small, equilateral-triangular. Elytra oval, convex above, broadest at the middle, punctate as in head; EL/EW 1.30; EL/PL 5.38; EW/PW 1.50; TL/EW 1.54. Legs slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, bearing short spines along apical margin, sparsely covered with short setae in apical part, with a pair of relatively short apodemes; tergite IX lightly sclerotized, trapezoidal, slightly bisinuate in apical margin, upturned widely in postero-lateral corners, with a pair of long and slender apodemes; sternite VIII–IX missing. Tegmen small, lightly sclerotized; basal part short and small; parameres wide, with thumb-like projections in apical part; antero-lateral corners of parameres projecting slightly. Penis long, moderately sclerotized, about 1.9 times as long as tegmen, asymmetrical; pala oblong, subparallel-sided, gently arcuate in anterior margin; trigonium short, distinctly asymmetrical, triangularly projecting in left lateral margin, pointed at apex, indistinct in

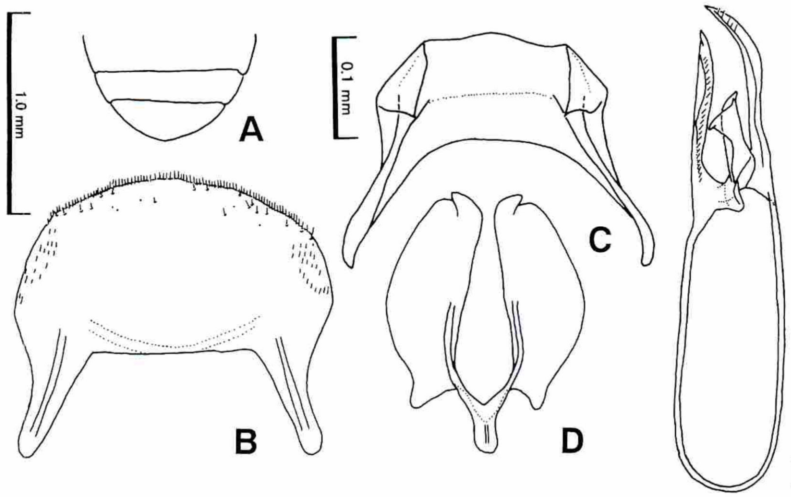


Fig. 29. *Hydrocyphon spinosus* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, tegmen; E, penis. Scales: 1.0 mm for A, 0.1 mm for B–E.

median plate; parameroids longer than trigonium, asymmetrical, with pointed apices, left one almost straight, with row of short spines in ventral part, right one longer than left one, slightly curved interiorly in apical part, with a row of short spines near apex.

Female. Unknown.

Measurement. Male (n = 1): TL 1.66 mm; PW 0.72 mm; PL 0.26 mm; EW 1.08 mm; EL 1.40 mm.

Distribution. India.

Remarks. This is a very remarkable species in having the strange shaped tegmen and parameroids bearing short spines, and its affinity is unknown.

Etymology. The specific name refers to the presence of short spines on parameroids.

Hydrocyphon klausnitzeri sp. nov.

(Figs. 2L, 30)

Type material. Holotype (NSMT): 1 ♂, "[North THAI] Maeo Khun Klang 1,350 m, Doi Inthanon 20. X. 1983 M. SAKAI". Paratypes (NSMT, EUM, NMW): 1 ♂, same data as for the holotype; 3 ♂♂, same locality and collector, but 17–X–1983, 2 male genit. s. nos. HY 817, 819; 1 ♂, same locality and collector, but 21–X–1983.

Description. Male. Body oblong-oval, convex above, shining, closely covered with yellowish white setae throughout. Coloration of body yellowish brown; femur and antennae infuscate.

Head slightly convex above, finely punctate, with almost straight in front margin of clypeus. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae short, relatively stout. Pronotum slightly depressed above in lateral parts, punctate as in head; front and lateral margins almost straight; antero-lateral corners obtuse; postero-lateral corners right-angled; posterior margin bisinuate; PW/PL

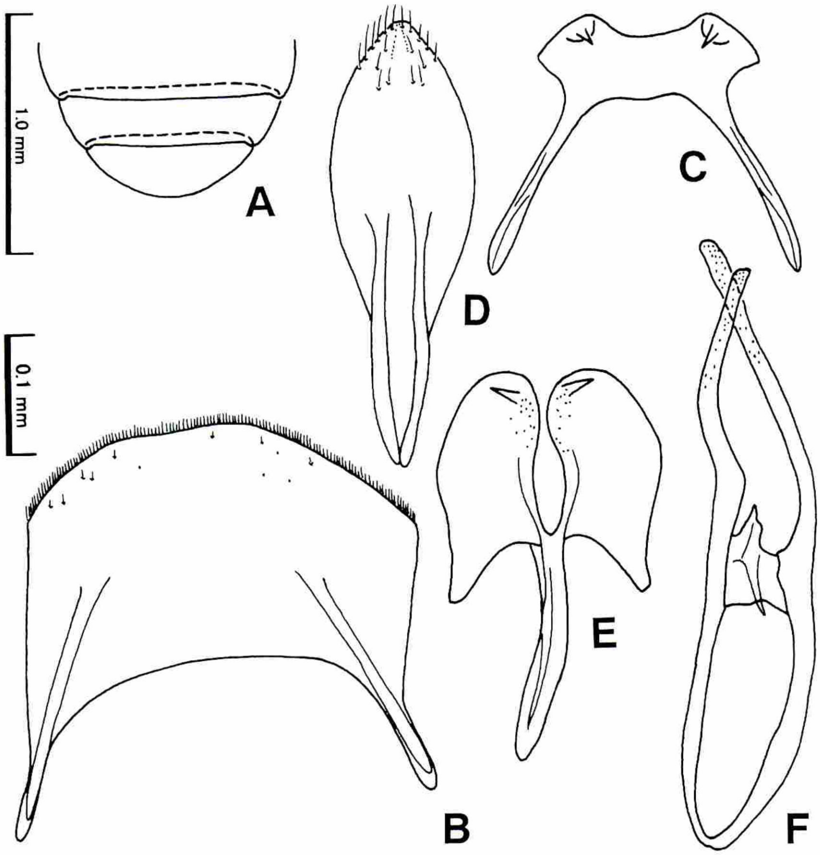


Fig. 30. *Hydrocyphon klausnitzeri* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, tergite IX; D, sternite IX; E, tegmen; F, penis. Scales: 1.0 mm for A, 0.1 mm for B–F.

2.33–2.56 (2.45). Scutellum relatively large, punctate as in pronotum. Elytra oval, convex above, broadest at the middle, punctate as in pronotum; EL/EW 1.34–1.38 (1.36); EL/PL 5.53–5.83 (5.68); EW/PW 1.61–1.83 (1.72); TL/EW 1.59–1.60 (1.59). Legs slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, sparsely covered with minute setae in apical part, bearing short spines at posterior margin, with a pair of short apodemes; tergite IX lightly sclerotized, widely concave in posterior margin, upturned in postero-lateral corners, with a pair of long apodemes; sternite IX lightly sclerotized, oblong, bearing short setae in apical part. Tegmen lightly sclerotized; basal part slender; parameres broad, punctate in interior part, with a pair of long projections. Penis moderately sclerotized, asymmetrical; basal part (pala) oblong; trigonium short, with median plate indistinct; parameroids long and slender, finely punctate in apical parts, with obtuse apices.

Female. Unknown.

Measurement. Male (n = 2): TL 2.05 and 2.22 mm; PW 0.70 and 0.87 mm; PL 0.30 and 0.34 mm; EW 1.28 and 1.40 mm; EL 1.75 and 1.88 mm.

Distribution. Thailand.

Remarks. This species is closely related to *Hydrocyphon panensis* YOSHITOMI et SATÔ known from Laos, but is distinguished from it by the penis of parameroids are somewhat short and covered with punctures.

Etymology. The species is named after Dr. Bernhard KLAUSNITZER (Dresden).

Hydrocyphon narraensis sp. nov.

(Figs. 2M, 31)

Type material. Holotype (NMW): 1♂, "PHIL.: Palawan, 1994, 7km N Narra, 5. IV. Estrella Falls leg. ZETTEL (59)", genit. s. no. HY 901.

Description. Male. Body oblong-oval, slightly convex above, slightly shining, closely covered with yellowish white setae throughout. Coloration of body yellowish brown, but head and antennal segments VI–IX dark brown; mouth parts, scutellum and tarsi fuscous.

Head slightly convex above, finely punctate; clypeus relatively long, almost straight in front margin. Eyes moderate in size, prominent; the distance between eyes about 2.0 times as long as the maximum diameter of an eye. Antennae short and slender, reaching about proximal 1/4 of elytra. Pronotum depressed above in lateral parts, punctate as in head; front margin almost straight; antero-lateral corners obtuse, about 120°; lateral and posterior margin gently arcuate; postero-lateral corners right-angled; PW/PL 2.60. Scutellum moderate in size, equilateral-triangular. Elytra oval, convex above, broadest at the middle, punctate as in head; EL/EW 1.34; EL/PL 5.00; EW/PW 1.44; TL/EW 1.61.

Apical margin of sternite VII gently arcuate. Tergite IX lightly sclerotized, transverse, triangularly upturned in postero-lateral corners, with a pair of very slender apodemes. Tegmen small, moderately sclerotized; basal part short, widest at the base; parameres long and slender, prolonged and curved laterally in apical part; antero-lateral corners oval and short. Penis moderately sclerotized, symmetrical, a little longer than tegmen; pala oval, widest at proximal 1/3; parameroids long and slender, obtuse at apices, sparsely punctate in apical part; trigonium consisting of a projection, a little shorter than parameroids, somewhat pointed at apex; median plate indistinct.

Female. Unknown.

Measurement. Male (n = 1): TL 1.80 mm; PW 0.78 mm; PL 0.30 mm; EW 1.12 mm; EL

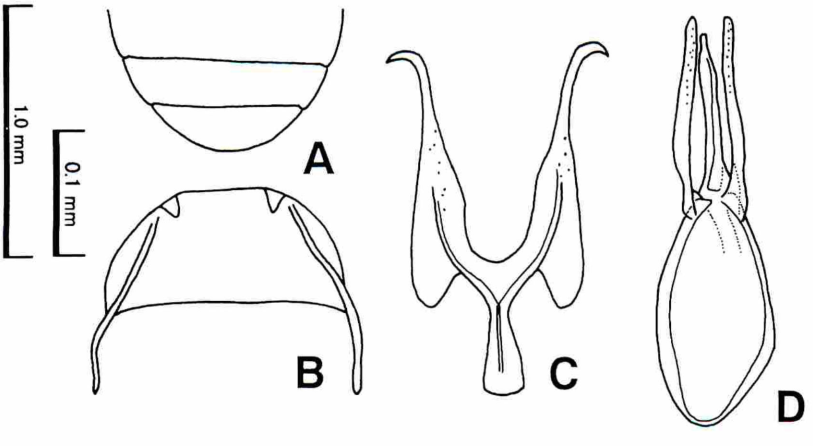


Fig. 31. *Hydrocyphon narraensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite IX; C, tegmen; D, penis. Scales: 1.0 mm for A, 0.1 mm for B–D.

1.50 mm.

Distribution. The Philippines (Palawan).

Remarks. This is a remarkable species in having strange shaped tegmen and penis.

Etymology. This species is named after the type locality.

Hydrocyphon indonesianus sp. nov.

(Figs. 2N, 32)

Type material. Holotype (NMW): 1♂, "INDONESIA: W Java Gn. Salak, 8 km S Bogor Sungai Ciapus, ca. 800 m lg. SCHUH, 31. 7. 1994". Paratypes (NMW, NSMT): 1♂, same data as for the holotype, genit. s. no. HY 859; 2♂♂, same locality and collector as for the holotype, but collecting date is "17. 8. 1994", genit. s. no. HY 859.

Description. Male. Body oblong-oval, convex above, shining, closely covered with yellowish white setae throughout. Coloration of body almost black; lateral parts of pronotum, antennal segments I–V and legs brown.

Head slightly convex above, finely punctate, with straight front margin of clypeus. Eyes moderate in size, prominent; the distance between eyes about 2.1 times as long as the maximum diameter of an eye. Antennae slender, reaching about proximal 1/5 of elytra. Pronotum depressed above in lateral parts, finely punctate; front margin straight; antero-lateral corners

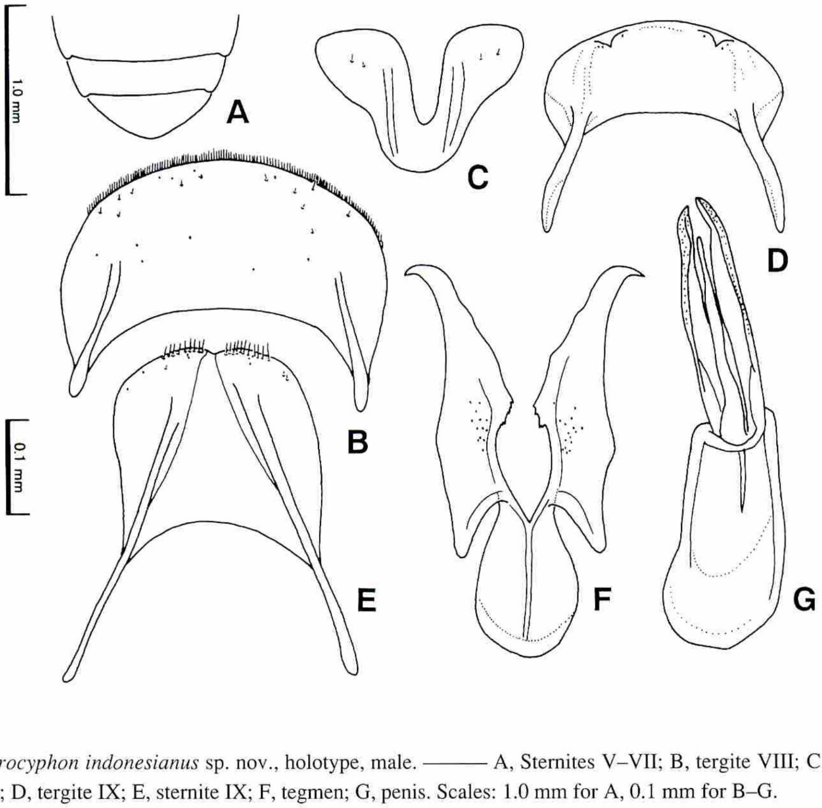


Fig. 32. *Hydrocyphon indonesianus* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

obtuse, about 120°; lateral and posterior margin arcuate; postero-lateral corners right-angled; PW/PL 2.30–2.57 (2.44). Scutellum small. Elytra oblong-oval, well convex above in mesal part, broadest at the middle, finely punctate; humeral parts indistinct; EL/EW 1.33–1.50 (1.40); EL/PL 4.50–5.09 (4.76); EW/PW 1.30–1.48 (1.39); TL/EW 1.60–1.83 (1.70). Legs slender, relatively long.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, transverse, sparsely covered with minute setae in apical part, bearing short spines along apical margin, with a pair of short apodemes; sternite VIII lightly sclerotized, U-shaped; tergite IX moderately sclerotized, transverse, triangularly upturned in apical part, with a pair of long and stout apodemes; sternite IX lightly sclerotized, bearing short setae in apical part, with a pair of long and slender apodemes. Tegmen large, moderately sclerotized; basal part broad and oval; parameres wide, slightly projecting and serrate in inner margin of basal 1/3, curved laterally and pointed at apices. Penis large, as long as tegmen, slightly asymmetrical; pala short, oblong; trigonium consisting of a long and slender projection, pointed at apex; median plate long and distinct; parameroids long and slender, finely punctate, obtuse at apices.

Female. Unknown.

Measurement. Male (n = 4): TL 2.08–2.20 (2.15) mm; PW 0.88–0.95 (0.91) mm; PL 0.35–0.40 (0.38) mm; EW 1.20–1.30 (1.27) mm; EL 1.73–1.80 (1.78) mm.

Distribution. Indonesia (Java).

Remarks. This is a remarkable species in having the strange-shaped tegmen and penis.

Etymology. The species is named after the type locality.

Hydrocyphon keralaensis sp. nov.

(Figs. 2O, 33)

Type material. Holotype (NMW): 1♂, "INDIA: Tamil Nadu, 12. 1. 1999, Palni Hills, 10°16'N, 77°33'E, Perumalmalai, 1,500 m, leg. D. BOUKAL (59)". Paratypes (NMW, NSMT, EUM): 2♂♂, "INDIA: Tamil Nadu, 12. 1. 1999, Palni Hills, 10°16'N, 77°33'E, Perumalmalai, 1,600 m, leg. D. BOUKAL (61)", genit. s. no. HY 906; 1♂, "S-INDIA, Kerala Palni Hills 1,500 m Kodaikanal Perumalmalai / 20. 12. 1993, 77°33'E/10°16'N, BOUKAL D. + KEJVAL Z. lgt.", genit. s. no. HY 908.

Description. Male. Body oblong-oval, convex above, shining, closely covered with yellowish white setae throughout. Coloration of body almost black; lateral parts of pronotum, antennal segments I–IV, mouth parts and legs brown.

Head slightly convex above, finely punctate; clypeus short, with front margin straight. Eyes moderate in size, prominent; the distance between eyes about 2.3 times as long as the maximum diameter of an eye. Antennae stout, relatively short, reaching about proximal 1/4 of elytra. Pronotum and scutellum as in the preceding species; PW/PL 2.20–2.55 (2.37). Elytra oval, convex above in mesal part, broadest at the middle, closely punctate; humeral parts indistinct; EL/EW 1.32–1.36 (1.34); EL/PL 4.02–4.85 (4.44); EW/PW 1.39–1.40 (1.40); TL/EW 1.64–1.65 (1.64). Legs slender, relatively long.

Apical margin of sternite VII arcuate. Tegmen long, moderately sclerotized; basal part expanded basally; parameres long and slender, hook-liked at apices, projecting interiorly in proximal part of inner margin; antero-lateral corners clearly projecting. Penis long, moderately

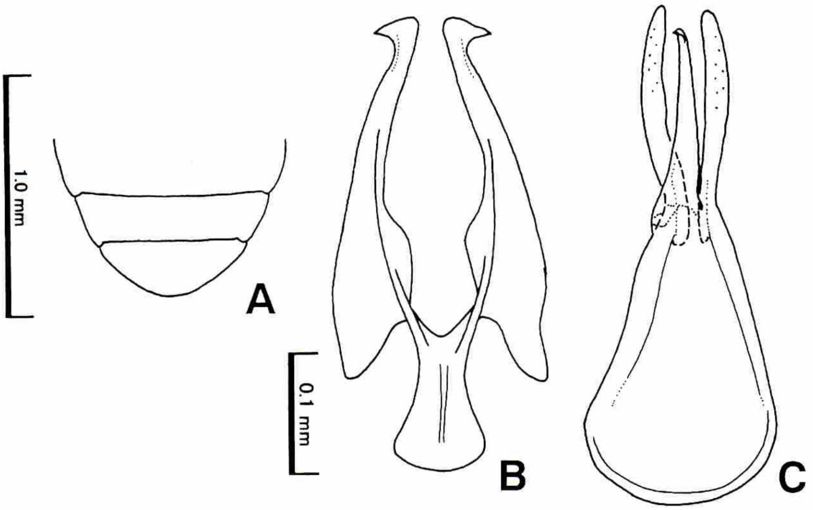


Fig. 33. *Hydrocyphon keralaensis* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tegmen; C, penis. Scales: 1.0 mm for A, 0.1 mm for B, C.

sclerotized, symmetrical, as long as tegmen; pala subtriangular, arcuate in basal margin; parameroids long and simple, obtuse at apices, sparsely punctate in apical parts; trigonium consisting of a projection, a little shorter than parameroids, evenly tapered to apex, hook-liked at apex; median plate indistinct.

Female. Unknown.

Measurement. Male (n = 2): TL 1.93 and 2.01 mm; PW 0.84 and 0.88 mm; PL 0.33 and 0.40 mm; EW 1.18 and 1.22 mm; EL 1.60 and 1.61 mm.

Distribution. India.

Remarks. This is remarkable species in having the strange shaped tegmen and penis.

Etymology. The species is named after the type locality.

Hydrocyphon trilobus sp. nov.

(Figs. 2P, 34)

Type material. Holotype (NMW): 1♂, "O–THAILAND, 11. 12. 1990 Ko Chang, Klong Prao Wasserfallbach (13, 2), leg. JÄCH". Paratypes (NMW, NSMT, EUM): 3♂♂, "O–THAILAND, 11. 12. 1990 Ko Chang, Klong Prao Tumpel (13, 1), leg. JÄCH", genit. s. nos. HY 843, 858; 1♂, "THAILAND, 5.9.1991 MaePing, Licht, leg. MALICKY", genit. s. no. HY 853.

Description. Male. Body oval, convex above, strongly shining, closely covered with yellowish white setae throughout. Coloration of body almost black, with pronotum orange to brown; legs yellowish brown.

Head slightly convex above, finely punctate. Antennae stout and short, reaching about proximal 1/5 of elytra. Pronotum and scutellum as in the preceding species; PW/PL 2.34–2.68 (2.46). Elytra oval, slightly convex above, broadest at the middle, closely punctate; humeral parts indistinct; EL/EW 1.19–1.25 (1.23); EL/PL 4.21–4.82 (4.50); EW/PW 1.44–1.58 (1.49); TL/EW 1.47–1.54 (1.50). Legs slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, wide, bearing

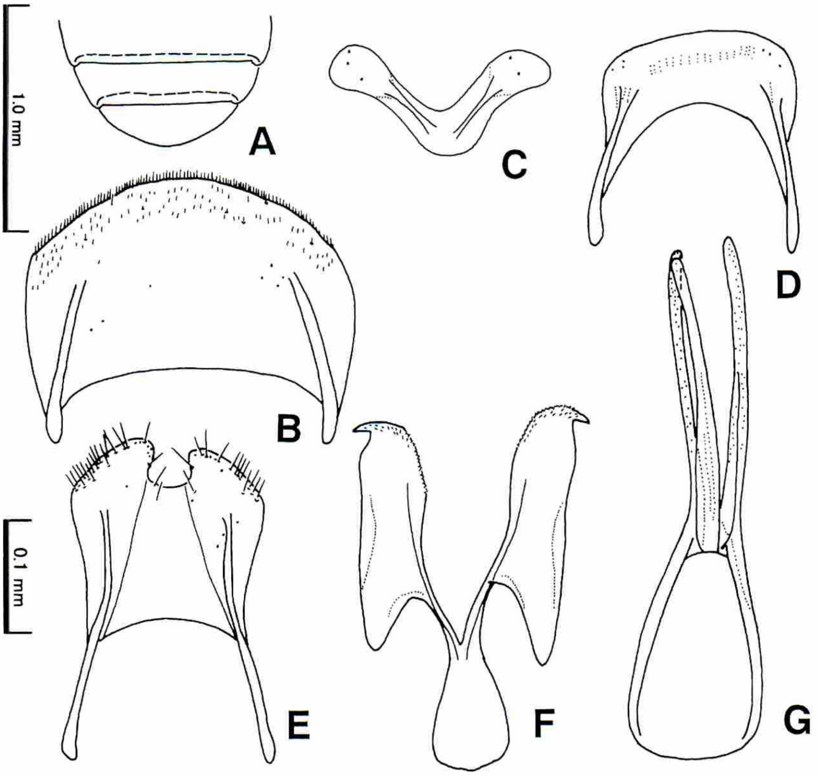


Fig. 34. *Hydrocyphon trilobus* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

minute setae and spines in apical part; sternite VIII membranous, V-shaped; tergite IX lightly sclerotized, trapezoidal, with shallow furrows on apical part; sternite IX lightly sclerotized, bearing short setae in apical part, with a pair of long and slender apodemes. Tegmen relatively small, moderately sclerotized; basal part oval, widest at the base; parameres broad, simple, covered with minute spines in apical parts, curved and pointed laterally in apices. Penis long, about 1.5 times as long as tegmen, slightly asymmetrical; pala oval, widest at the base; trigonium with a simple long projection, obtuse at apex; parameroids long, simple, finely punctate, with rounded apices.

Measurement. Male (n = 4): TL 1.63–1.98 (1.79) mm; PW 0.73–0.90 (0.80) mm; PL 0.28–0.38 (0.33) mm; EW 1.08–1.35 (1.20) mm; EL 1.35–1.60 (1.46) mm.

Distribution. Thailand.

Remarks. This species is closely related to the following species, but it is distinguished from the latter by different structure of the male genitalia.

Etymology. Referring to the shape of trilobed penis.

Hydrocyphon subtrilobus sp. nov.

(Figs. 2Q, 35)

Type material. Holotype (NMW): 1♂, "INDONESIEN, 17. 2. 1991 (22) Siberut, Toteburu-Bakeuluk, leg. JÄCH", genit. s. no. HY 864. Paratypes (NMW): 1 ♂, "INDONESIEN, 19. 2. 1991 (24) Siberut, Madobak, W Muarasiberut, leg. SCHÖDL", genit. s. no. HY 862; 1 ♂, "INDONESIEN, 14. 2. 1991 Bungus Beach (18), leg. SCHÖDL", genit. s. no. HY 879.

Description. Male. Body oval, convex above, strongly shining, closely covered with yellowish white setae throughout. Coloration of body almost black, with pronotum orange to brown; legs yellowish brown.

Head slightly convex above, finely punctate. Antennae stout and short, reaching about proximal 1/5 of elytra. Pronotum and scutellum as in the preceding species; PW/PL 2.57–2.75 (2.66). Elytra oval, slightly convex above, broadest at the middle, closely punctate; humeral parts indistinct; EL/EW 1.17–1.22 (1.20); EL/PL 4.43–4.69 (4.56); EW/PW 1.41–1.45 (1.43); TL/EW 1.42–1.50 (1.46). Legs slender.

Apical margin of sternite VII arcuate. Tergite VIII moderately sclerotized, trapezoidal, closely covered with short spines in apical part, with a pair of short apodemes; sternite VIII membranous, U-shaped; tergite IX lightly sclerotized, small, trapezoidal; sternite IX lightly

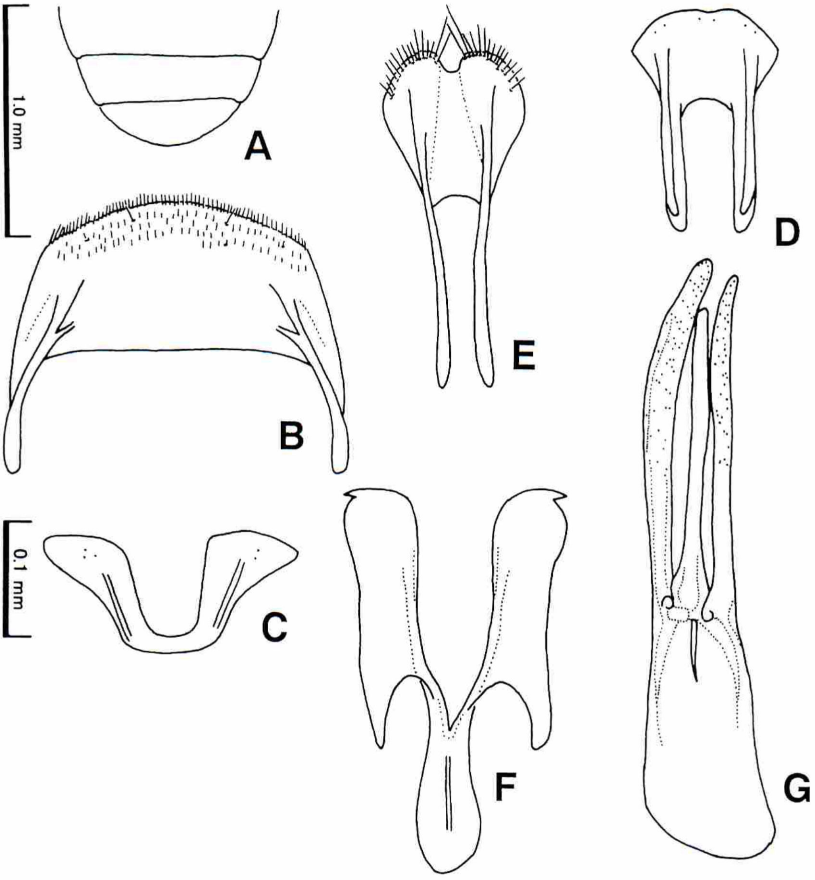


Fig. 35. *Hydrocyphon subtrilobus* sp. nov., holotype, male. ——— A, Sternites V–VII; B, tergite VIII; C, sternite VIII; D, tergite IX; E, sternite IX; F, tegmen; G, penis. Scales: 1.0 mm for A, 0.1 mm for B–G.

sclerotized, bearing short setae in apical part, with a pair of slender and long apodemes. Tegmen relatively small, moderately sclerotized; basal part oblong; parameres broad, simple, curved laterally and pointed at apices; antero-lateral corners of parameres distinctly projecting. Penis long, about 1.4 times as long as tegmen, asymmetrical; pala oblong, subparallel-sided; trigonium consisting of simple long projection, obtuse at apex, parameroids long and simple, almost straight, finely punctate, rounded at apices.

Female. Unknown.

Measurement. Male (n = 2): TL 1.82 and 1.90 mm; PW 0.88 and 0.90 mm; PL 0.32 and 0.35 mm; EW 1.27 and 1.28 mm; EL 1.50 and 1.55 mm.

Distribution. Indonesia (Siberut Isl.).

Remarks. This species is closely related to *Hydrocyphon trilobus* sp. nov. from Thailand, but is distinguishable from the latter by the following characteristics of male genitalia: parameres of tegmen lacking spines in apical part; penis somewhat broader, more symmetrical, more stout in parameroids.

Etymology. The specific name refers to the similarity with *Hydrocyphon trilobus* sp. nov.

Hydrocyphon guangxiensis YOSHITOMI et KLAUSNITZER, 2003

Hydrocyphon guangxiensis YOSHITOMI et KLAUSNITZER, 2003: 521.

Additional material examined. 1♂ (EUM), "Tam Dao, Vinh Phu Prov., VIETNAM, 23. IV. 1995, M. SATÔ leg."; 1♂, same data but 24. IV. 1995, genit. s. no. HY 913; 1♂, (NMW), "Cuc Phong, N. Vietnam, 22–III–1995, T. NIISATO leg."

Distribution. China, Vietnam (new record).

Hydrocyphon dudgeoni YOSHITOMI et KLAUSNITZER, 2003

Hydrocyphon dudgeoni YOSHITOMI et KLAUSNITZER, 2003: 522.

Additional material examined. 1♂ (OXUM), "China", "87 7/13/2153", "Hope Ent. Coll. Oxford Univ. Mus standing in coll. under *Cyphon* sp. Ex. Hope/W'wood Coll.".

Distribution. China.

Hydrocyphon lii YOSHITOMI et KLAUSNITZER, 2003

Hydrocyphon lii YOSHITOMI et KLAUSNITZER, 2003: 524.

Additional material examined. 1♀ (NMW), "CHINA: Guangdong Prov., 60 km E of Fengkai, 23°26'36"N, 111°58'10"E, 1. 11. 2001, ca. 230 m JÄCH and KOMAREK (CWBS 458)".

Distribution. China.

Acknowledgements

We wish to express our sincere gratitude to Dr. S. NOMURA (NSMT), Dr. N. OHBAYASHI and Dr. M. SAKAI (EUM), Dr. M. JÄCH (NMW) and Mr. J. HOGAN (OXUM) for their permission to loan the museum collections, and to Dr. M. OHARA (The Hokkaido University Museum) for critically reading the manuscript of this paper. Hearty thanks are also due to Mr. R. RUTA (Poland), Dr. B. KLAUSNITZER (Dresden), Dr. M. BRANCUCCI (Basel), Dr. T. NIISATO (Bioindicator Co., Ltd.), and Mr. S. NAGAI (Nagano) for their kind help in various ways.

要　　約

吉富 博之・佐藤 正孝：東洋区のマルハナノミ科，パート８．ケシマルハナノミ属 *Hydrocyphon*の新種と追加記録．——— 中国，マレーシア，タイ，ネパール，ミャンマー，フィリピン，インド，インドネシアから*Hydrocyphon*属の33新種を8種群のもと記載し，既知種４種の追加記録を示した．このうち４種群，*mirabilis*, *nyholmi*, *tamilensis* および *kinabalensis* 種群は今回新たに創設されたものである．*Cyphon amaurus* KLAUSNITZERは，雄交尾器の特徴から本属の *nyholmi* 種群へ移動させた．また，巻末に本属の世界の種と種群のチェックリストを付した．本論文で記載した新種は以下の通り．*H. bifidus* sp. nov., *H. mirabilis* sp. nov., *H. nyholmi* sp. nov., *H. tamilensis* sp. nov., *H. triforius* sp. nov., *H. thailandicus* sp. nov., *H. nepalensis* sp. nov., *H. kachinensis* sp. nov., *H. lusonensis* sp. nov., *H. subrotundus* sp. nov., *H. subcelatus* sp. nov., *H. kinabalensis* sp. nov., *H. palawanensis* sp. nov., *H. javanicus* sp. nov., *H. baliensis* sp. nov., *H. manfredi* sp. nov., *H. sarawakensis* sp. nov., *H. kodadai* sp. nov., *H. palniensis* sp. nov., *H. chiangmaiensis* sp. nov., *H. sumatrensis* sp. nov., *H. malaysianus* sp. nov., *H. submalaysianus* sp. nov., *H. boukali* sp. nov., *H. sagaingensis* sp. nov., *H. dispar* sp. nov., *H. spinosus* sp. nov., *H. klausnitzeri* sp. nov., *H. narraensis* sp. nov., *H. indonesianus* sp. nov., *H. keralaensis* sp. nov., *H. trilobus* sp. nov., *H. subtrilobus* sp. nov.

References

JÄCH, M. A. and L. JI, 2003. China Water Beetle Survey (1999–2003), pp. 1–20. *In*: JÄCH, M. A., and JI, L. (eds.): Water Beetles of China. Vol. III, pp. 519–537. — Wien: Zoologisch-Botanische Gesellschaft in Österreich and Wiener Coleopterologenverein, ii+vi+ 572 pp.

KLAUSNITZER, B., 1980. Zur Kenntnis der Helodidae des Himalaja-Gebietes (Col.). *Entomologica Basiliensia,* **5**: 195–214.

NYHOLM, T., 1972. Zur Morphologie und Funktion des Helodiden-Aedoeagus (Col.). *Entomologica scandinavica,* **3**: 81–119.

NYHOLM, T, 2000. New species, taxonomic notes, and genitalia of New Zealand *Cyphon* (Coleoptera: Scirtidae). *New Zealand Entomologist*, **22**: 45–67.

PIC, M., 1914. Helodidae. *In* JUNK and SCHENKLING (eds.), *Coleopterorum Catalogus*, (**58**): 22–52. W. JUNK, Berlin.

PIC, M. , 1934. Coléoptères exotiques en partie nouveaux. *L'Echange*, (50): 23.

REDTENBACHER, L., 1858. Fam. Cyphonides. *In Fauna austrriaca, ed. II*: 517–519.

YOSHITOMI, H., 2001. Taxonomic study on the genus *Hydrocyphon* (Coleoptera, Scirtidae) of Japan and her adjacent regions. *Elytra, Tokyo*, **29**: 87–107.

YOSHITOMI, H., 2003. Scirtidae of the Oriental Region, Part 1. A new species of the genus *Elodes* (Coleoptera, Scirtidae) from Laos, with a species list of the genus *Elodes* known from the Oriental Region. *Special Bulletin of the Japanese Society of Coleopterology, Tokyo*, (**6**): 227–231.

YOSHITOMI, H. and B. KLAUSNITZER, 2003. Scirtidae: World check list of *Hydrocyphon* REDTENBACHER, and revision of the Chinese species. *In*: JÄCH, M. A., and JI, L. (eds.): Water Beetles of China. Vol. III, pp. 519–537. – Wien: Zoologisch-Botanische Gesellschaft in Österreich and Wiener Coleopterologenverein, ii+vi+ 572 pp.

YOSHITOMI, H. and M. SATÔ, 2003 a. Scirtidae of the Oriental Region, Part 2. The genus *Hydrocyphon* (Coleoptera, Scirtidae) of Laos. *Japanese Journal of systematic Entomology*, **9**: 223–235.

YOSHITOMI, H. and M. SATÔ, 2003 b. Scirtidae of the Oriental Region, Part 3. A new species of the genus *Prionocyphon* (Coleoptera: Scirtidae) from Laos, with a world check list of the species. *The Entomological Review of Japan, Osaka*, **58**: 187–190.

YOSHITOMI, H. and M. SATÔ, 2003 c. Scirtidae of the Oriental Region, Part 4. Genus *Elodes* (Coleoptera: Scirtidae) of Nepal. *The Entomological Review of Japan, Osaka*, **58**: 191–199.

YOSHITOMI, H. and M. SATÔ, 2004 a. Scirtidae of the Oriental Region, Part 5. Genus *Elodes* (Coleoptera : Scirtidae) of Vietnam. *The Entomological Review of Japan, Osaka*, **59**: 81–86.

YOSHITOMI, H. and M. SATÔ, 2004 b. Scirtidae of the Oriental Region, Part 6. A revision of the species-group of *Cyphon hashimotorum* (Coleoptera, Scirtidae). *Japanese Journal of systematic Entomology*, **10**: 89–105.

YOSHITOMI, H. and M. SATÔ, 2004 c. Scirtidae of the Oriental Region, Part 7. A new species of the genus *Sacodes* (Coleoptera, Scirtidae) from Taiwan. *Japanese Journal of systematic Entomology*, **10**: 211–214.

(Received June 25, 2005; Accepted July 23, 2005)

Appendix

Check list of the genus *Hydrocyphon* of the world

The *australis* species-group

australis LINDER, 1864	France, Spain, Italy, Sicily, Bosnia Herzegovina
bhutanensis KLAUSNITZER, 1976	Bhutan
consolatorius KLAUSNITZER, 1990	Iran
finitimus NYHOLM, 1977	Turkey
minous NYHOLM, 1967	Crete
oblongulus NYHOLM, 1967	Cyprus
segrex NYHOLM, 1972	Turkey, Iran, Caspian Sea-province, Greece
vicinans NYHOLM, 1972	Turkey, Israel

The *bicolor* species-group

bicolor YOSHITOMI et SATÔ, 2003	Laos

The *bicornis* species-group

bicornis YOSHITOMI et KLAUSNITZER, 2003	China

The *deflexicollis* species-group

celatus KLAUSNITZER, 1980	India
championi REITTER, 1903	Spain
deflexicollis (MÜLLER, 1821)	Europe
forficulatus NYHOLM, 1981	Myanmar

fulvescens NYHOLM, 1977	Spain
fuscatus KLAUSNITZER, 1970	Albania
illiesi KLAUSNITZER, 1991	Algeria
interrogationis KLAUSNITZER, 1980	Pakistan
kachinensis YOSHITOMI et SATÔ, sp. nov.	Myanmar
kaszabi KLAUSNITZER, 1980	Vietnam
lusonensis YOSHITOMI et SATÔ, sp. nov.	Philippines
novaki NYHOLM, 1967	Italy, Yugoslavia, Albania, Greece
ovatus NYHOLM, 1967	Italy
pernigrans NYHOLM, 1967	Spain
proximus NYHOLM, 1967	Italy
pulchellus KLAUSNITZER, 1980	Nepal
rivulorum NYHOLM, 1977	Turkey
sakaii YOSHITOMI et SATÔ, 2003	Laos
subcelatus YOSHITOMI et SATÔ, sp. nov.	India
subrotundus YOSHITOMI et SATÔ, sp. nov.	Thailand

The *dentatus* species-group

dentatus YOSHITOMI et SATÔ, 2003	Laos

The *kambaiticus* species-group

alticola (KLAUSNITZER, 1976)	Bhutan, India
aritai YOSHITOMI, 2001	Taiwan
bifidus YOSHITOMI et SATÔ, sp. nov.	China
kambaiticus NYHOLM, 1981	Myanmar
nakanei YOSHITOMI, 2001	Japan
sinicus PIC, 1934	China
stupendus NYHOLM, 1981	Myanmar
uenoi YOSHITOMI et KLAUSNITZER, 2003	China

The *kinabalensis* species-group

kinabalensis YOSHITOMI et SATÔ, sp. nov.	Malaysia

The *mirabilis* species-group

mirabilis YOSHITOMI et SATÔ, sp. nov.	China

The *nyholmi* species-group

amaurus (KLAUSNITZER, 1980), comb. nov.	India
nyholmi YOSHITOMI et SATÔ, sp. nov.	Nepal

The *pallidicollis* species-group

auratus RUTA, 2004	Vietnam
baliensis YOSHITOMI et SATÔ, sp. nov.	Indonesia
boukali YOSHITOMI et SATÔ, sp. nov.	India
chiangmaiensis YOSHITOMI et SATÔ, sp. nov.	Thailand
dispar YOSHITOMI et SATÔ, sp. nov.	Thailand
dudgeoni YOSHITOMI et KLAUSNITZER, 2003	China
gereckei HERNANDO, AGUILERA et RIBERA, 2004	Morocco
guangxiensis YOSHITOMI et KLAUSNITZER, 2003	China, Vietnam
hainanensis YOSHITOMI et KLAUSNITZER, 2003	China
hamiota NYHOLM, 1972	Spain

hydrocyphonoides (TOURNIER, 1868)	Italy, Sicily, Tunisia, Algeria
indonesianus YOSHITOMI et SATÔ, sp. nov.	Indonesia
javanicus YOSHITOMI et SATÔ, sp. nov.	Indonesia
keralaensis YOSHITOMI et SATÔ, sp. nov.	India
klausnitzeri YOSHITOMI et SATÔ, sp. nov.	Thailand
kodadai YOSHITOMI et SATÔ, sp. nov.	Philippines
laeticolor NYHOLM, 1967	Spain
laosensis YOSHITOMI et SATÔ, 2003	Laos
lii YOSHITOMI et KLAUSNITZER, 2003	China
manfredi YOSHITOMI et SATÔ, sp. nov.	Indonesia
malaysianus YOSHITOMI et SATÔ, sp. nov.	Malaysia
narraensis YOSHITOMI et SATÔ, sp. nov.	Philippines
nuristanicus KLAUSNITZER, 2004	Afghanistan
palawanensis YOSHITOMI et SATÔ, sp. nov.	Philippines
pallidicollis RAFFRAY, 1873	Corsica, Sardinia, Algeria, Morocco
palniensis YOSHITOMI et SATÔ, sp. nov.	India
panensis YOSHITOMI et SATÔ, 2003	Laos
rectangulus KLAUSNITZER, 1991	Algeria
sagaingensis YOSHITOMI et SATÔ, sp. nov.	Myanmar
sarawakensis YOSHITOMI et SATÔ, sp. nov.	Malaysia
schoenmanni YOSHITOMI et KLAUSNITZER, 2003	China
similis RUTA, 2004	Vietnam
spinosus YOSHITOMI et SATÔ, sp. nov.	India
submalaysianus YOSHITOMI et SATÔ, sp. nov.	Malaysia
subtrilobus YOSHITOMI et SATÔ, sp. nov.	Indonesia
sumatrensis YOSHITOMI et SATÔ, sp. nov.	Indonesia
trilobus YOSHITOMI et SATÔ, sp. nov.	Thailand

The *renati* species-group

dubius (KLAUSNITZER, 1980)	India
elongatus NYHOLM, 1981	Myanmar
iriomotensis YOSHITOMI, 2001	Japan
jaechi YOSHITOMI et KLAUSNITZER, 2003	China
nepalensis YOSHITOMI et SATÔ, sp. nov.	Nepal
renati NYHOLM, 1981	Myanmar
satoi YOSHITOMI, 2001	Japan, Taiwan, Korea
taiwanus YOSHITOMI, 2001	Taiwan
thailandicus YOSHITOMI et SATÔ, sp. nov.	Thailand
triforius YOSHITOMI et SATÔ, sp. nov.	Malaysia, Thailand
wakaharai YOSHITOMI et SATÔ, 2003	Laos

The *tamilensis* species-group

tamilensis YOSHITOMI et SATÔ, sp. nov.	India

The *yoshitomii* species-group

yoshitomii KLAUSNITZER, 2002	Nepal

Species incertae sedis

atratus MOTSCHULSKY, 1863	Ceylon

Ent. Rev. Japan, **60** (2): 207–217, October 31, 2005

Descriptions of Two New Species of the Genus *Apterocatops* MIYAMA (Coleoptera: Leiodidae: Cholevinae) from the Kii Peninsula, Central Japan

Keitaro HARUSAWA

2–11–12, Nishiyamadai, Osaka-sayama C., 589–0022 Japan

Abstract Two new species, *Apterocatops ennogyojya* sp. nov. and *A. kiimontanus* sp. nov. from the Kii Peninsula, Central Japan are described and illustrated, with a key to the all known species of this genus.

Introduction

The genus *Apterocatops* was established by MIYAMA (1985) based on two species from Shikoku, *A. tsurugisanus* and *A. ishizuchisanus,* and the genus can be distinguished from the genus *Catops* PAYKULL, 1798, by the combination of the following characteristics: ultimate segment of maxillary palpi more or less longer than penultimate one; elytral suture fused; hind wings absent; median lobe of male genitalia asymmetrical and twisted to the right in dorsal view, and swollen ventrad in the full length, with apical orifice open near the side.

Recently, I have discovered two unknown large catopid beetles belonging to the genus from high altitude of the Kii Peninsula, Honshû, through the field research of ground beetles. In this paper, I am going to describe these two new species.

Materials and methods

Most specimens examined were collected by the pit fall traps with several kinds of baites. The abbreviations used herein are as follows: (C) – rotten chicken; (S) – rotten squid; (M) – molasses; (P) – pupal powder of silk worm.

The type series, except some paratypes are deposited in the collection of the Osaka Museum of Natural History.

Measurements and drawings were made through a Nikon SMZ stereoscopic microscope with the aid of a calibrated micrometer for measuring and a section one for drawing, minimal interval of scale 0.1 mm and 0.5 mm, respectively.

In this paper, the following parts of body are measured as follows: body length is the distance from the front margin of vertex with head kept vertically to apex of elytra; head length is the distance from apical margin of clypeus to occipital carina; elytral length is the maximum distance from the apical corner of scutellum to apex of elytron seen right dorsally.

Apterocatops ennogyojya HARUSAWA, sp. nov.

(Figs. 1, 3, 4–a, b; 5–a, b; 6–a~m)

Male. Body ovate, broad, well shining, convex above, rapidly narrowed posteriorly and wholly covered with short yellowish recumbent pubescence, without opalescent lustre on elytra. Colour brown, head and pronotum darkened, antennae light brown, with apical half of 9th, 10th and 11th segments whitish.

Head transverse, 1.2 times as long as wide, uniformly and shallowly punctate, interstices with distinct reticulate microsculpture. Antennae slender, less than half the body length, 3rd segment 1.4 times as long as 2nd, 11th pointed apically in dorsal view; 1st the longest, 2nd rather shorter than 4th and as long as 5th, 3rd the most slenderer, 4th as long as and slenderer than 11th, 5th to 7th almost equal in the length to each other and a little wider than the each precedings, 8th the shortest and the following two segments subequal in width to each other and shorter than the preceding segment, 11th same ratio of the length to width as in 7th.

Pronotum transverse, 1.4 times as long as wide, widest at basal 2/5; lateral margins weakly arcuate and narrowed in front; posterior angles gently rounded; surface rather more densely punctate and finely microsculptured than on head.

Scutellum punctate as on pronotum.

Elytra 1.1 times as wide as long, widest at near basal 1/3, sulcate along each lateral margin which is carinate, widely rounded and subtruncated at the tip; disc with eight striae, rather coarsely, sparsely and shallowly punctate than on pronotum and finely microsculptured.

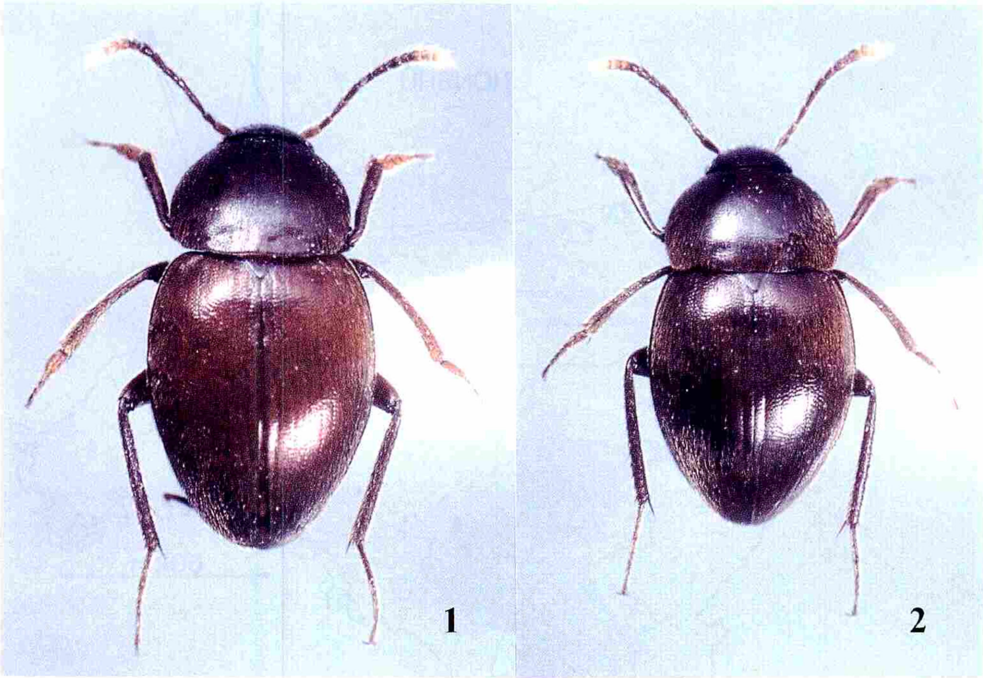
Legs robust; protibiae (Fig. 6, b) weakly sinuate, having same thickness almost in the full length; protarsi dilated in basal three segments, 1st segment as wide as apex of protibia; mesotarsi dilated in 1st segment; metatrochanters short, rhombic, angular at the middle of hind margin and subacute at apex; metafemora roundly depressed before apex in ventral surface.

Sixth abdominal segment (Fig. 6, d, e, f) very large, with tergite almost half as long as elytra.

Male genitalia (Fig. 6, h, i) markedly asymmetrical, strongly and uniformly curved to the right side in dorsal view, with pointed apex; median lobe thick, robust, nearly as long as 2/3 of elytra, gently attenuate to subacute apex, depressed in the middle portion of dorsum, carinate at lateral margins, with a small upturned tooth at the tip of each carina; apical orifice open at the left side of about apical third of ventral face, with a cuneiform operculum; parameres slender, rather short, curved along and reaching apical fourth of median lobe, with a pair of short terminal setae.

Measurements of male (n = 10). Body length 4.60–5.23 mm; body width (= elytral width) 2.48–2.80 mm. Head length/width 0.6–0.8. Antennal segment length/width: I 2.8–3.8; II 2.2–3.0; III 2.7–4.1; IV 2.5–3.6; V 2.0–3.0; VI 1.5–2.1; VII 1.4–1.7; VIII 0.8–1.4; IX 0.9–1.4; X 0.9–1.1; XI 1.5–2.0. Pronotal length/width 0.6–0.8. Elytral length/width 0.9–1.3.

Female. Body somewhat longer than male. Antennae rather shorter, with 3rd segment 1.3 times as long as 2nd, which is rather slender than 4th and longer than 5th. Pronotum rather wider, more strongly narrowed anteriorly; protibiae slender, almost parallel-sided in the full length; pro- and mesotarsi simple, slender and not dilated in basal segments. Elytra rather longer. Sixth abdominal tergite with posterior margin emarginate at the middle; gonocoxite with a seta at the middle and stylus with a long seta at apex, three on apical and one on basal portion; spermatheca strongly bent at the middle, each cornu with almost same length and smooth surface.



Figs. 1–2. Habitus of *Apterocatops* spp. —— 1, *A. ennogyojya* sp. nov., male, holotype; 2, *A. kiimontanus* sp. nov., male, holotype.

Measurements of female (n = 10). Body length 4.80–5.30 mm; body width (= elytral width) 2.69–2.90 mm. Head length/width 0.6–0.9. Antennal segment length/width: I 2.5–3.8; II 2.6–3.0; III 2.8–4.0; IV 2.2–3.1; V 1.7–2.6; VI 1.2–2.2; VII 1.4–1.8; VIII 0.8–1.2; IX 0.8–1.2; X 0.8–1.4; XI 1.3–1.6. Pronotal length/width 0.5–0.7. Elytral length/width 1.0–1.2.

Distribution. Ohmine Mts. (1,750–1,890 m in altitude), Nara Prefecture, Kii Peninsula, Honshû.

Habitat. In sub-alpine coniferous forest.

Type series. Holotype: ♂, Misen, 1,820–1,890 m, Tenkawa-mura, Yoshino-gun, Nara Pref., 10. IX.~2. X. 1989, K. HARUSAWA leg. (C). Paratypes: 49♂♂, 21♀♀, same data as the holotype; 3♂♂, 3♀♀, Myôjyô-ga-take, 1,880 m, same data as the holotype; 1♂, 4♀♀, Ôkami-daira~Misen, 1,770 m, same administrative section as above, 15~16. IX. 1973, K. HARUSAWA and Y. FUJIMOTO leg. (M); 1♂, 4♀♀, Misen, 1,850 m, same data above; 6♂♂, 11♀♀, Hakken-zan~Myôjyô-ga-take, 1,880 m, same data as above; 1♂, Daifugen-dake, 1,750 m, Kamikitayama-mura, Yoshino-gun, Nara Pref., 10~11. X. 1992, K. HARUSAWA leg. (S).

Other specimens examined: 1♂, same data as one of the paratype series (Ôkami-daira~Misen).

Remarks. The present new species is very similar in general appearance to *Apterocatops tsurugisanus* MIYAMA, 1985 and *A. ishizuchisanus* MIYAMA, 1985, but it can be easily distinguished from the latters by the rounded posterior angles of pronotum. In the latters, those are distinctly angular. The present species is separated from *A. kiimontanus* sp. nov. in having rhombic metatrochanters, different structures of 6th abdominal segments, sinuate protibiae in

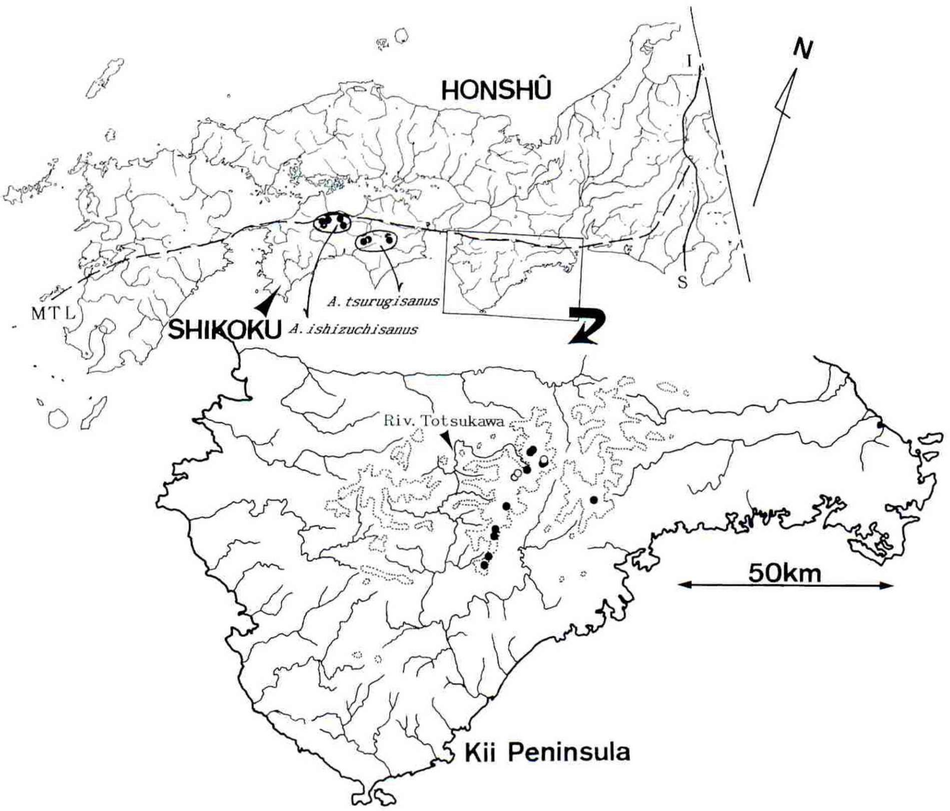


Fig. 3. Map showing the distribution of *Apterocatops* spp. from Shikoku and the Kii Peninsula, Honshû. Open circles: *A. ennogyojya* sp. nov. Closed circles: *A. kiimontanus* sp. nov. Area of a dotted line showing over 1,000 m in altitude. MTL (broken line): the Median Tectonic Line. I–S (hair line): the Itoigawa-Shizuoka Tectonic Line (after R. SUGIYAMA ed., 1973).

male and curved and pointed median lobe of male genitalia.

Etymology. The specific name is derived from "ENNO-OZUNU" who is known as "ENNO-GYÔJYA" the founder of "Shugendoh" mountain ascetic technique for religeous realization, and worked around Ohmine Mts. at the Hakuhô period in the late 7th century.

Apterocatops kiimontanus HARUSAWA, sp. nov.

(Figs. 2, 3, 4–c~h; 5–c~h; 7–a~m)

The present new species is very similar to *A. ennogyojya* sp. nov. in the general appearance and in the structures and proportions of antennae, but the body is much smaller, paler in colour, lighter brown to brownish, the elytra are more strongly narrowed posteriad and subacute at the tips, and the pronotum is somewhat wider.

Male. Antennae with 3rd segment 1.4 times as long as 2nd, 6th and 7th almost equal in length to each other. Pronotum 1.6 times as long as wide, widest at basal 1/3. Legs robust; protib-

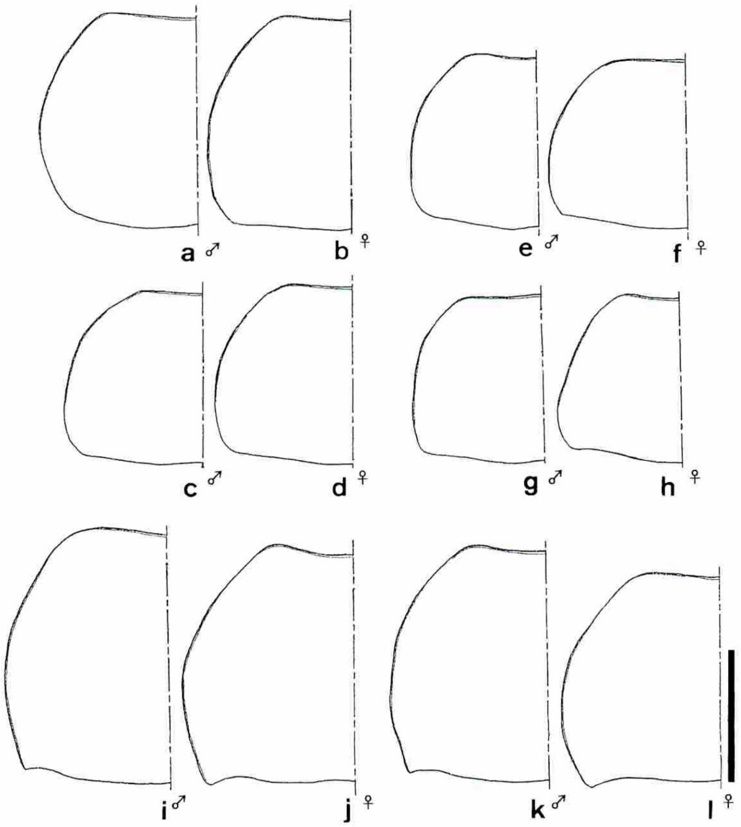


Fig. 4. Pronotum of *Apterocatops* spp. in dorsal view (right half omitted). a–b: *A. ennogyojya* sp. nov. —— a, from Myôjyô-ga-take; b, from Hakken-zan~Myôjyô-ga-take. c–h: *A. kiimontanus* sp. nov. —— c–d, from Shaka-ga-take; e–f, from Inamura-ga-take; g–h, from Ohdai-ga-hara. i–j: *A. ishizuchisanus* MIYAMA from Ishizuchi-san. k–l: *A. tsurugisanus* MIYAMA from Tsurugi-san. Scale: 1.0 mm.

iae (Fig. 7, b) nearly straight, not so thick, gradually thickened apicad; metatrochanters long, spindle-shaped, with hind margin uniformly arcuate and pointed at apex. Sixth abdominal segment (Fig. 7, d, e, f) moderately large, with tergite nearly one-third as long as elytra. Male genitalia (Fig. 7, h, i) asymmetrical, gently and uniformly sinuate; median lobe stout and long, nearly half as long as elytra, rather parallel-sided and depressed in about apical half of dorsum, with apex widely rounded and weakly upturned at apex; apical orifice open at the left side with subooval operculem; parameres relatively long, reaching near the apex of median lobe.

Measurements of male (n = 10). Body length 4.00–4.55 mm; body width (= elytral width) 2.22–2.52 mm. Head length/width 0.7–0.9. Antennal segment length/width: I 2.4–3.7; II 2.0–2.5; III 3.0–3.6; IV 2.1–3.0; V 1.8–2.5; VI 1.5–2.0; VII 1.2–1.7; VIII 0.7–1.0; IX 0.7–1.2; X 0.8–1.1; XI 1.1–1.9. Pronotal length/width 0.5–0.7. Elytral length/width 1.0–1.3.

Female. The 3rd antennal segment 1.4 times as long as 2nd. Pronotum 1.6 times as long as wide. Sixth abdominal tergite simply arcuate at posterior margin. Stylus a little shorter than the

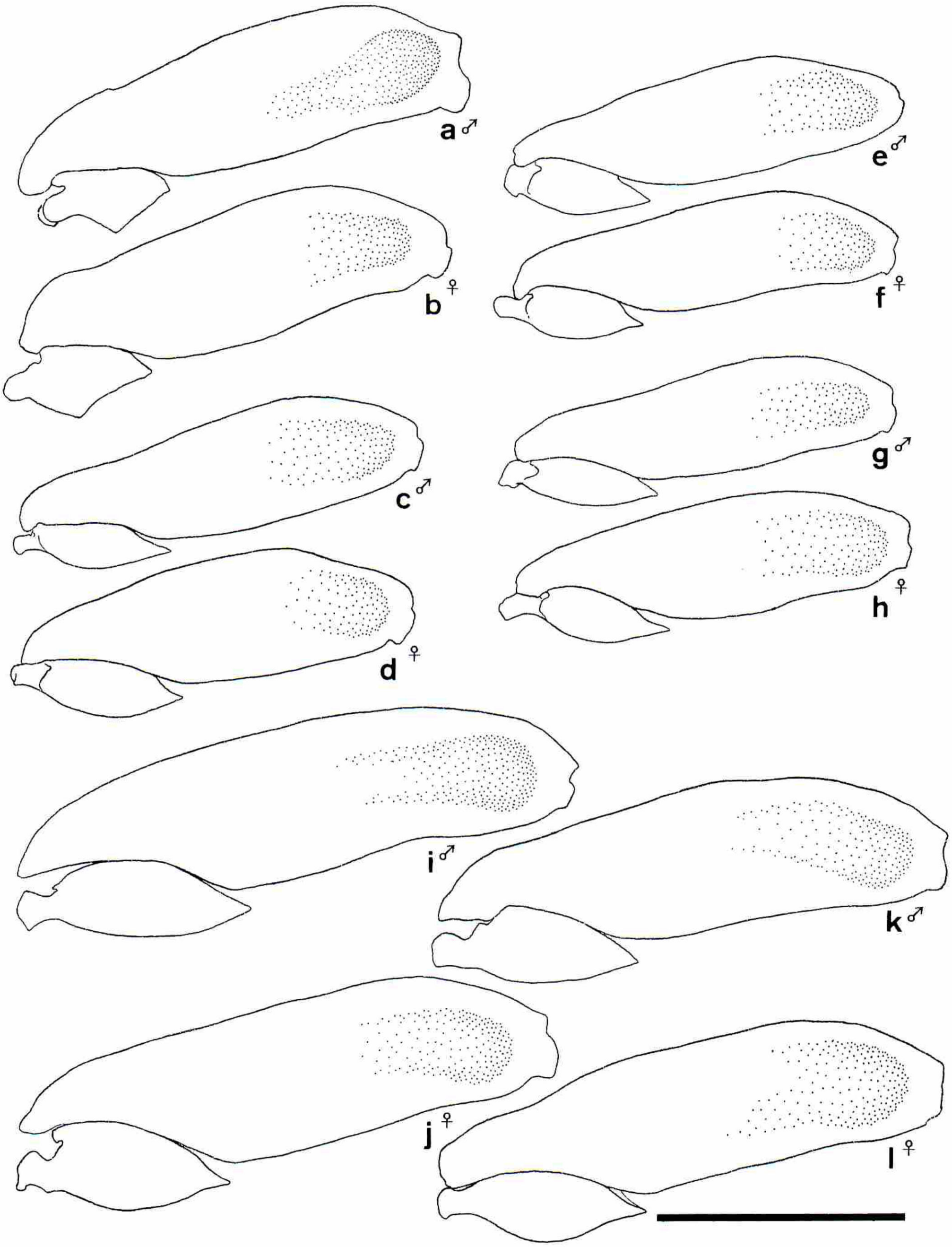


Fig. 5. Metatrochanter and metafemur (left part) of *Apterocatops* spp. in ventral view. a–b: *A. ennogyojya* sp. nov. —— a, from Misen; b, from Myôjyô-ga-take. c–h, *A. kiimontanus* sp. nov.—— c–d, from Shaka-ga-take; e–f, from Inamura-ga-take; g–h, from Ohdai-ga-hara. i–j: *A. ishizuchisanus* MIYAMA from Ishizuchi-san; k–l: *A. tsurugisanus* MIYAMA from Tsurugi-san. Scale: 1.0 mm.

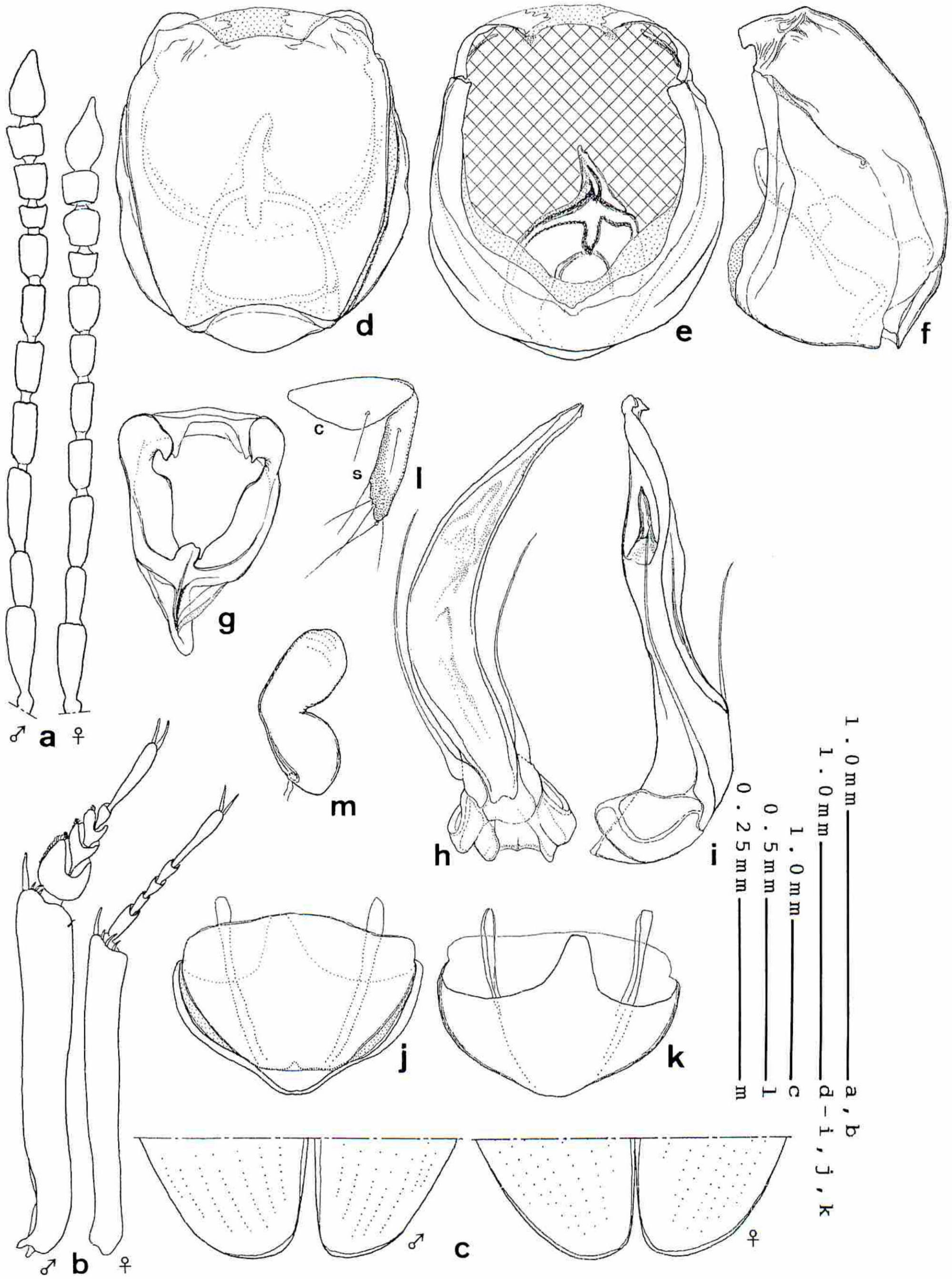


Fig. 6. *Apterocatops ennogyojya* sp. nov. —— a, Antenna (right part) in dorsal view; b, protarsus and protibia (right part) in dorsal view; c, elytral apices in postero-dorsal view; d, male 6th abdominal and genital segments in dorsal view; e, ditto, in ventral view; f, ditto, in lateral view; g, male genital segment in ventral view; h, male genitalia in dorsal view; i, ditto, in left lateral view: j, female 6th abdominal and genital segments in dorsal view; k, ditto, in ventral view; l, female genital segments in dorsal view (left part. c: gonocoxite, s: stylus); m, spermatecha.

former. Spermatheca moderately bent near the middle, apical side of cornu a little longer than basal one, with inner surface partly wrinkled.

Measurements of female (n = 10). Body length 4.10–4.80 mm; body width (= elytral width) 2.40–2.65 mm. Head length/width, 0.7–0.8. Antennal segment length/width: I 2.5–4.0; II 2.0–2.8; III 3.0–4.2; IV 2.3–2.6; V 1.7–2.3; VI 1.5–2.3; VII 1.1–2.0; VIII 0.7–1.1; IX 0.7–1.1; X 0.8–1.1; XI 1.1–1.6. Pronotal length/width 0.5–0.7. Elytral length/width 1.0–1.2.

Distribution. Ohmine and Taikô Mts. (1,000~1,790 m in altitude), Nara and Mie Prefectures, Kii Peninsula, Honshû.

Habitat. From the zone of *Fagus crenata* BLUME to sub-alpine coniferous forest. In a boulder gravelly ground surface such as mountain stream or around the limestone area, the new species is inhabiting exceptionally in a lower altitude.

Type series. Holotype: ♂, Shaka-ga-take, 1,790 m, Totsukawa-mura, Yoshino-gun, Nara Pref., 9~10. IX. 1995, K. HARUSAWA leg. (S). Paratypes: 22♂♂, 11♀♀, same data as the holotype; 1♂, Kotsubo-dani, Kôsei-gawa, 1,150 m, Tenkawa-mura, Yoshino-gun, Nara Pref., 22~23. IX. 1983, K. HARUSAWA leg. (C); 1♀, Inamura-ga-take, 1,540 m, Tenkawa-mura, 15~16. IX. 1988, K. HARUSAWA leg. (C); 14♂♂, 3♀♀, same locality and data but 1,650 m; 1♂, 1♀, same locality as above, 1,700 m, 16. X. 1988, K. HARUSAWA leg. (dung of carnivorous mammal); 7♂♂, same locality and data but 1,720 m, (C); 1♂, same locality above, 2. X. 1988, K. URATA leg.; 7♂♂, 6♀♀, Ohdai-ga-hara, 1,650 m, Miyagawa-mura, Taki-gun, Mie Pref., 14~15. IX. 1992, K. HARUSAWA leg. (S); 2♂♂, Shôfugen-dake, 1,640 m, Kamikitayama-mura, 10~11. X. 1992, K. HARUSAWA leg. (S); 1♀, Musô-dô, 1,100 m, Kamikitayama-mura, 25~26. VI. 1994, K. HARUSAWA leg. (S); 9♂♂, 8♀♀, Seishômurô-dake, 1,210 m, Totsukawa-mura, 14~15. X. 1995, K. HARUSAWA leg. (S); 2♂♂, 7♀♀, Nehan-dake, 1,370 m, Totsukawa-mura, 14~15. X. 1995, K. HARUSAWA leg. (S); 1♀, Gyôsen-zan, 1,220 m, Totsukawa-mura, 9~10. X. 1997, K. HARUSAWA leg. (S); 18♂♂, 7♀♀, Kasasute-yama, Totsukawa-mura, 9~10. X. 1997, K. HARUSAWA leg. (S); 6♂♂, 5♀♀, same data as above but (M); 2♂♂, Kawase-dani, NW. of Sanjyô-ga-take, 1,000 m, Tenkawa-mura, 14~15. IX. 2002, K. HARUSAWA leg. (S).

Other specimens examined: 1♀, same data as the holotype; 1♀, same data as one of the paratypes (Inamura-ga-take, 1,650 m); 1♀, same locality (1,700 m), 29~30. VIII. 1988, K. HARUSAWA leg. (C).

Remarks. The present new species also can be easily distinguished from *A. tsurugisanus* MIYAMA and *A. ishizuchisanus* MIYAMA by the rounded posterior angles of pronotum, and from *A. ennogyojya* sp. nov. in having spindle-shaped metatrochanters, smaller 6th abdominal segments, apically thickened male protibiae, and sinuate median lobe with rounded apex in the male genitalia.

Etymology. The specific name is derived from the type area which is situated on the Kii Peninsula.

Apterocatops tsurugisanus MIYAMA

(Figs. 3, 4–k, l; 5–k, l)

Specimens examined. 1♀, Tsurugi-san, Tokushima Pref., 17. VII. 1971, M. YOSHIDA leg.; 10♂♂, 6♀♀, Gyôba~Ichi-no-mori, Tsurugi-san, 1,700~1,800 m, Koyadaira-son, Mima-gun, Tokushima Pref., 14~15. IX. 1986, K. HARUSAWA, H. KINUGASA, and O. TOMINAGA leg. (C).

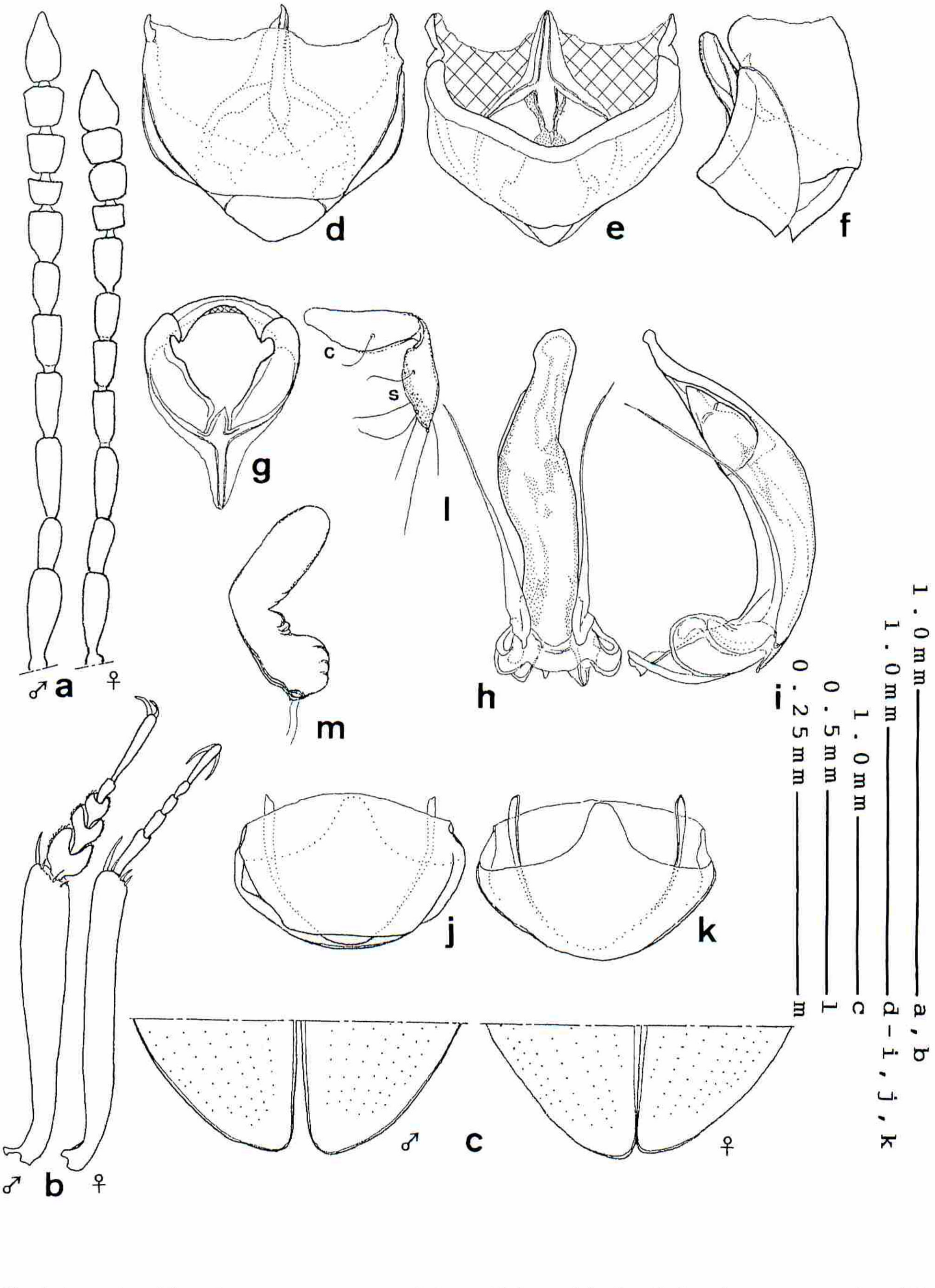


Fig. 7. *Apterocatops kiimontanus* sp. nov. —— a, Antenna (right part) in dorsal view; b, protarsus and protibia (right part) in dorsal view; c, elytral apices in postero-dorsal view; d, male 6th abdominal and genital segments in dorsal view; e, ditto, in ventral view; f, ditto, in lateral view; g, male genital segment in ventral view; h, male genitalia in dorsal view; i, ditto, in left lateral view; j, female 6th abdominal and genital segments in dorsal view; k, ditto, in ventral view; l, female genital segments in dorsal view (left part. c: gonocoxite, s: stylus); m, spermatecha.

Apterocatops ishizuchisanus MIYAMA

(Figs. 3, 4–i, j; 5–i, j)

Specimens examined. 3♂♂, Tsuchi-goya~Marutaki-goya, Ishizuchi-san, 1,560 m, Omogo-mura, Kamiukena-gun, Ehime Pref., 12~13. IX. 1986, K. HARUSAWA, H. KINUGASA, and O. TOMINAGA leg. (C); 1♀, Tsuchi-goya~Ishizuchi-san, 1,600 m, Ehime Pref., T. HOSOI leg. (walking on the ground); 1♀, Tsuchi-goya~Ninokusarimoto-goya, Ishizuchi-san, 1,700~1,780 m, Saijyô C., Ehime Pref., 22. IX. 1990, K. HARUSAWA leg. (walking on the ground at night); 7♂♂, 7♀♀, same data and collectors as above but 22~23. IX. 1990, (S); 1♂, 2♀♀, Nishikuromori, 1,600 m, Hongawa-mura, Tosa-gun, Kôchi Pref., 21. IX. 2002, M. MORI leg. (P); 5♀♀, Iwaguro-yama, 1,500 m, Saijyô C., Ehime Pref., 22. IX. 2002, M. MORI leg. (P).

General remarks

For these twenty years, the field research on geographical distribution of the genus *Apterocatops* has been carried out by me in numerous localities, but no specimen was taken at any habitat from the west of River Totsukawa in the Kii Peninsula or the Inner Zone (Japan Sea side) of the Median Tectonic Line in Shikoku, Honshû and Kyûshû.

At present, the geographical distribution of the genus seems to be limited to the Outer Zone (Pacific side) of the Median Tectonic Line (Fig. 3), and also to the "Sohayaki" regions harbouring a lot of old-type organisms of the Tertial origin, called Sohayaki elements (HIURA, 1970; HOTTA, 1973; MURATA, 1968). Therefore, *Apterocatops* might be a relict genus endemic to the sub-alpine zone of these regions.

Key to the species of the genus *Apterocatops*

1. Posterior angle of pronotum rounded (Figs. 4, a–h). 2
— Posterior angle of pronotum rectangular and rather pointed at the tip (Figs. 4, i–l). 3
2. Elytral apices widely rounded, subtruncated at the tip (Fig. 6, c); metatrochanters rhombic, angular at the middle of hind margin, and subacute at apex (Figs. 5, a, b). ..... *A. ennogyojya* sp. nov.
— Elytral apices narrowly rounded, subacute at the tip (Fig. 7, c); metatrochanters spindle-shaped, uniformly arcuate at hind margin, and strongly pointed at apex (Figs. 5, c–h). .... *A. kiimontanus* sp. nov.
3. Third antennal segment less than 1.5 times as long as 2nd (III/II = 1.4 in male, 1.4 in female); protibiae weakly sinuate in male. .... *A. tsurugisanus* MIYAMA
— Third antennal segment more than 1.5 times as long as 2nd (III/II = 1.6 in male, 1.5 in female); protibiae not sinuate, only simply thickened apically in male. .... *A. ishizuchisanus* MIYAMA

Acknowledgements

I wish to express my hearty thanks to the late Mr. Isamu HIURA, a former head curator of the Osaka Museum of Natural History, for his constant encouragement and suggestions on how present entomological fauna of Japan were formed geo-historically. My sincere thanks are also extended to Mr. Yasuhiko HAYASHI (Kawanishi, Hyôgo Prefecture) and Mr. Yorio MIYATAKE (Kashihara, Nara Prefecture), for their critically reading the original manuscript.

Thanks are also due to Mr. Hiroshi MIYAMA (Odawara, Kanagawa Prefecture.) and Dr. Sadanari HISAMATSU (Matsuyama, Ehime Prefecture), for their bring me a fair of informations of the genus, and to Messrs Yukinobu FUJIMOTO (Toyonaka, Osaka Prefecture), the late Hironao KINUGASA (Yazu-gun, Tottori Prefecture), Osamu TOMINAGA (Nara City), Hiroshi OHIRA (Osaka City), Masato MORI (Nishinomiya, Hyôgo Prefecture), Takaaki HOSOI (Kashiba, Nara Prefecture), and Takashi MURAI (Kawanishi, Hyôgo Prefecture) for their accompanying with my field research or kindly offering materials used in the study.

要　　約

春沢　圭太郎：ツヤチビシデムシ属の本州からの２新種の記載．——— 日本のツヤチビシデムシ属 *Apterocatops* の２新種，オオミネツヤチビシデムシ *A. ennogyojya* とキイツヤチビシデムシ *A. kiimontanus* を紀伊半島から発見，記載・図示し，四国産の２種ツルギツヤチビシデムシ *A. tsurugisanus* MIYAMA とイシヅチツヤチビシデムシ *A. ishizuchisanus* MIYAMA を加えた検索表を付けた．２新種は，前胸背板後角が丸まることによって *A. tsurugisanus* と *A. ishizuchisanus* から区別される．*A. ennogyojya* は，後転節が菱形で短く先端に穏やかに突出し，雄は前脛節が弱く波曲することによって *A. kiimontanus* と区別できる．いずれの種も，雄は生殖器の形状と構造によって区別は容易である．

References

HIURA, I., 1970. The speciation and Quaternary environments in Japanese archipelago. *Mammalian Science* (20–21): 51–59. *The Mammalogical Society of Japan, Tokyo.* (In Japanese.)

HOTTA, M., 1974. History and geography of plants, pp. 233–278. *Evolutionary Biology in Plants* III. Sanseido Co. Ltd., Tokyo. (In Japanese with English book title.)

MIYAMA, H., 1985. Notes on catopid beetles of Japan, I. *The Transactions of the Shikoku Entomological Society*, **17**: 15–20.

MURATA, G., 1968. Outline of the distribution of plants in Kinki district, pp. 1–14. "Plants of Kinki district." *Memorial issue of 200 times meeting for plants collecting of Kinki Botanical Association.* Kinki Botanical Association, Osaka. (In Japanese.)

SUGIYAMA, R. ed., 1973. *Median Tectonic Line.* 401 pp. Tokai University Press, Tokyo. (In Japanese with English title and summary.)

(Received July 5, 2005; Accepted July 29, 2005)

Ent. Rev. Japan, **60** (2): 219–226, October 31, 2005

A New Species of the Genus *Aristochroa* from Myanmar with Redescription of *A. freyi* (Coleoptera: Carabidae: Pterostichini)

Noboru ITO

1–1718 Higashiuneno, Kawanishi City, Hyôgo, 666–0117 Japan

and

Yûki IMURA

Shinohara-chô 1249–8, Kôhoku-ku, Yokohama, 222–0026 Japan

Abstract A new species of the pterostichine genus *Aristochroa* is described under the name of *Aristochroa watanabei* from North Myanmar. This is the first record of the genus from the locality. Also *Aristochroa freyi* STRANEO from Tibet is redesrcibed. Some systematic notes are given.

Thirteen species of the genus *Aristochroa* TSCHITSCHÉRINE of the tribe Pterostichini have been hitherto known only from China (Yunnan, Sichuan, Shaanxi, and Xizang). Recently we obtained distinct specimens of the genus from North Myanmar through the courtesy of Mr. Yasuyuki WATANABE. At first glance, we estimated them as a new species and concluded the estimation to be right by careful examination.

In this paper, we are going to describe it as a new species, *Aristochroa watanabei* and redescribe *A. freyi* STRANEO from Tibet near the type locality of the new species. Also we suggest that the species of the genus can be divided into two species groups by characteristics of the male genitalia.

We cordially thank Dr. Fabrizio RIGATO of the Museo Civico di Storia Naturale, Venezia and Dr. Thierry DEUVE of the Muséum National d'Histroire Naturelle, Paris for their kind loan of the type specimens, and Dr. Robert POGGI of the Museo Civico di Stria Naturale "G. Doria", Genova for his giving information about depository of the type specimen, *A. freyi*. Lastly we wish to express our special thanks to Mr. Yasuyuki WATANABE, Amagasaki for his kindly offering invaluable material.

Aristochroa freyi STRANEO

(Figs. 1, 4)

Aristochroa freyi STRANEO, 1938, Boll. Soc. ent. Ital., **70**: 122.

Body oblong, very shiny, clearly reddish metallic green lustre on dorsal surface, slightly brownish black on ventral surface; antennae black, maxillary and labial plpli, mandibles and legs brownish black, odd-numbered intervals of elytra with reddish coppery reflection and even-numbered ones with metallic green reflection.

Head small, nearly two-thirds the pronotal width, weakly convex, minutely and moderately punctate; labrum transversely subtrapezoidal, truncate apically; clypeus gently emarginate, deeply and longitudinally grooved from setiferous pore at each side, flattened between the grooves; clypeal suture relatively deep; frontal impressions each not deep, joining to the clypeal groove, with two short and arcuate grooves near apex of itself; space between the impressions not elevated; eyes prominent, but not hemispherical; temples rather steeply oblique, short, one-fourth of the eye length; space between buccal fissure and genuine ventral margins of eyes wide; antennae moniliform, short, not surpassing elytral bases, 2nd segment with one seta and 3rd one with six setae preapically, 3rd segment nearly one-fifth longer than the 4th and twice the 2nd; maxillary and labial palpi tumid, truncate at apices; ligula wide, expanded forwards, truncate at apex where four setae are situated; mentum with median tooth wide and weakly bifid at apex, epilobes narrow; microsculpture obscure, partly visible as isodiametric meshes.

Pronotum quadrate, weakly cordate, not transverse, one-fourth wider than long, flat on disc and rather strongly declivous apico-laterad, superficially and microscopically punctate; sides smooth, weakly arcuate in front and linearly oblique behind from middle, sinuate before base; apex shallowly emarginate, bordered at sides; base 1.21 times as wide as apex, barely bisinuate, unbordered throughout; apical angles not produced forwards, narrowly rounded; basal angles each rectangular, with a tiny tooth at tip; lateral furrows curved in a line lengthwise; basal foveae each possessing two deep elliptic grooves, ridged between the grooves, humped outside the outer groove; front transverse impression obsolete, the hind one vague; median line clearly engraved, obliterated near apex and base; microsculpture obscure on large area and clear in lateral furrows and basal foveae, mostly consisting of fine transverse meshes and of mixture of isodiametric and square meshes in the furrows and foveae.

Elytra oblong, a half longer than wide, well convex, sparsely with short and transverse rugosities; sides weakly arcuate in humeri, very shallowly sinuate before apices which are rounded at distal margins and weakly separated to each other; bases each shallowly emarginate, forming a right angle with side; striae vague, discontinuously impressed, and with small punctures whose spaces are rather wide, scutellary striole short and vaguely impressed; intervals almost flattened, odd-numbered intervals wide and the remaining ones narrow, setiferous pore of 3rd interval not present but the characteristic may be various in individuals; marginal series continuous, composed 16–17 umbilicate pores; microsculpture very clear, more strongly impressed on even-numbered intervals than in odd-numbered ones, consisting of isodiametric meshes.

Ventral surface vaguely punctate on meso- and metepisterna, wholly glabrous; metepisterna short, 1.18 times as wide as long; 6th abdominal sternite in male even on surface, weakly rounded at apical margin, unisetose at each side.

Fore tibiae smooth on dorsal surface, not produced apico-external corners, with six spines along each external margin near apex; hind tarsi 1.18 times as long as the width of head including eyes, 1st segment 0.73 times as long as the 2nd and 3rd combined together and twice the 4th, claw segment trisetose along each ventral margin.

Aedeagus (Fig. 4) in lateral view, rather strongly curved behind basal bulb, thence feebly arcuate apicad, very slightly sinuate at apex, not thick in apical half, in dorsal view, asymmetrical, expanded laterad in left side; apical lobe rather elongate, triangular, and rounded at tip; api-

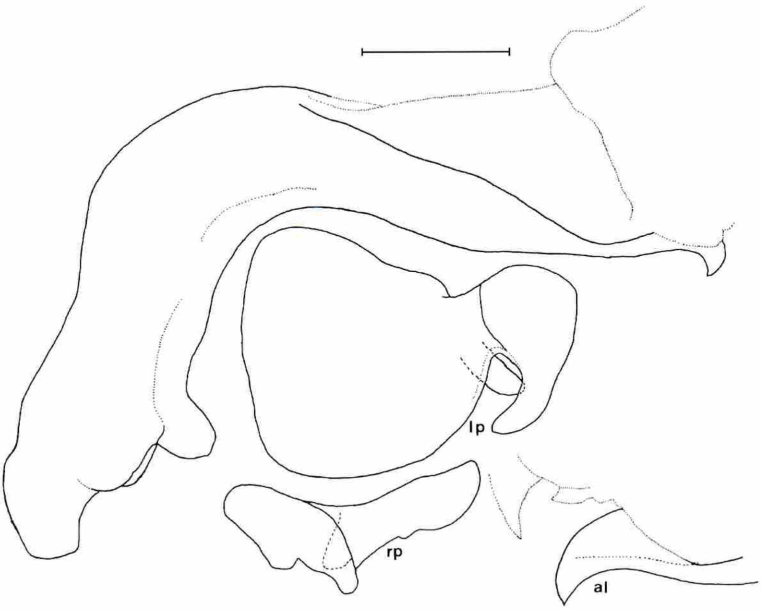
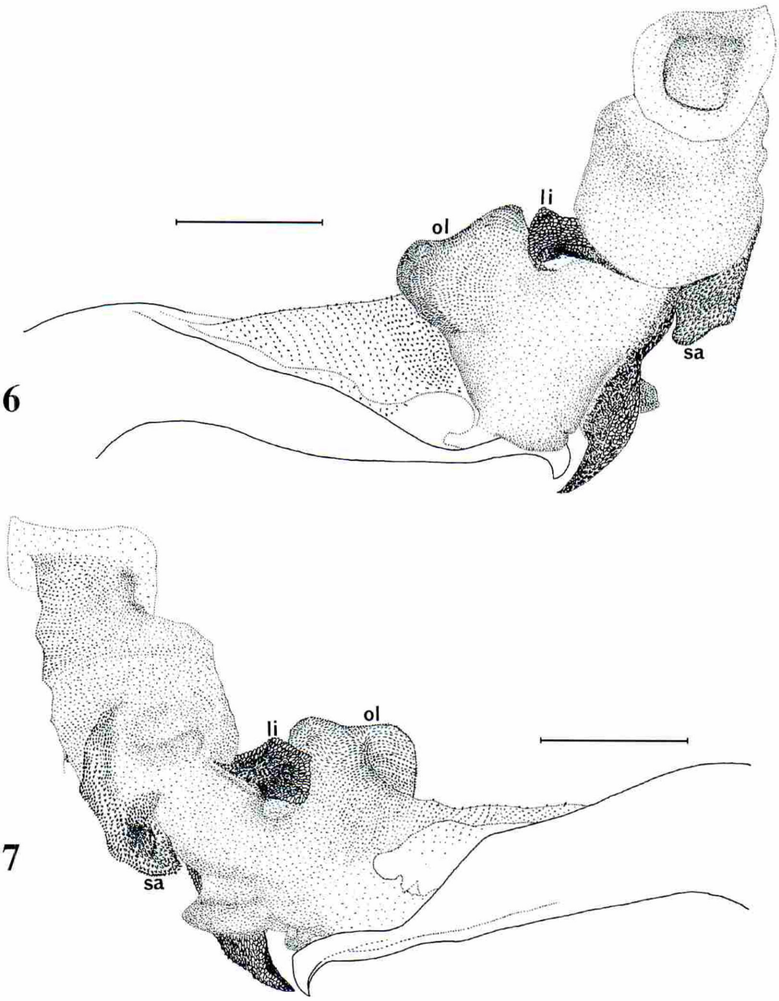


Fig. 5. Male genitalia of *Aristochroa watanabei* N. Ito et Imura, viewed from left lateral side. al, apical lobe in dorso-lateral aspect; lp, left paramere; rp, right paramere. Scale: 1mm.

as the pronotal width; labrum transversely quadrate, shallowly emarginate at apex; clypeus swollen, laterally with a deep groove, which longitudinally runs from a setiferous pore at each side to frontal impression and is fused with the impression; clypeal suture thin but clear; frons well convex between frontal impressions which are very deep and gradually widened behind, strongly elevated on lateral spaces between the impressions and supraorbital grooves; eyes hemispherically prominent, not large; temples steeply convergent behind, a half of the eye length; genuine ventral margins of eyes widely separated from buccal fissure; mandibles robust, left mandibles abruptly curved just behind apex and right one uniformly arcuate; antennae relatively long, apical two segments reaching elytra, basal four segments moniliform, fairly dilated apicad, 2nd segment unisetose at apex, 3rd segment hexasetose there, as long as the 4th and twice the 2nd; apical segments of labial and maxillary palpi tumid and truncate at tips; ligula wide, bisinuate and quadrisetose at apex, outer two of the setae very short; mentum strongly toothed at middle, the tooth rather deeply bifid and thickly bordered at apex, epilobes expanded medially; microsculpture weakly visible as fine and transverse meshes.

Pronotum cordate, gently convex, widest at apical third, very minutely and moderately punctate all over, with several fine and transverse rugosities on disc; sides clearly serrate, weakly arcuate from apex to the middle, thence sublinearly oblique, slightly sinuate before base, in each with two setae in addition to two ordinary setae near middle and at basal angle, respectively; apex gently emarginate, unbordered medially; base as wide as apex, feebly bisinuate, without border; apical angles moderately protruding, narrowly rounded; basal angles rectangular or slightly obtuse, not toothed at tips; lateral furrows engraved in a line lengthwise; basal foveae



Figs. 6–7. Everted inner sac in male genitalia of *Aristochroa watanabei* N. ITO et IMURA. —— 6, Left lateral view; 7, right lateral view. li, ligulum; sa, saccellus,; ol, ostial lobe. Scale: 1 mm.

each very deep, bearing two longitudinal grooves besides itself, narrowly ridged between the external groove and lateral furrow; front transverse impression obscure or very shallow, vaguely concave near the ends; the hind one shallowly biarcuate; median line clear, gradually deepened basad, obliterated just behind apex and reaching base; microsculpture largely very fine and not clear, a little clearer in lateral furrows and basal foveae, consisting of mixtures with square and transverse meshes.

Elytra suboval, wide, 1.37–1.40 times as wide as the pronotal width, fairly convex, finely, sparsely and transversely short-rugose, without any punctures; sides clearly and widely curved in humeri, deeply sinuate preapically; apices widely roundly separated; bases partly broken in the holotype and entire in the paratype, blunt at humeral angles; striae finely and clearly impressed; intervals gently convex, odd-numbered intervals much wider than even-numbered ones, 3rd interval with two or three setiferous pores, front pore adjoining 4th stria and the remaining pores near or along 3rd stria; microsculpture more clearly impressed than those of head and pronotum, a little clearer in female than in male, observable as mixtures of square and isodiametric meshes.

Ventral surface glabrous except ordinary setae and impunctate; metepisterna very short, a half wider than long; 6th abdominal sternite weakly swollen centrally, weakly arcuate in male and subtruncate in female at apical margin, bisetose in both sexes at each side.

Fore tibiae smooth, apico-external corner more or less protruding obliqo-apicad and with three short spines; hind tarsi 1.28 times in male and 1.20 times in female as long as the width of head, 1st segment nearly seven-tenths of the 2nd and 3rd combined together and two-fourths longer than the 2nd, 3rd one-fifth longer than the 4th, claw segment tri- or quadrisetose along external margin and trisetose along inner margin of ventral surface.

Aedeagus (Figs. 5–7) in lateral view, abruptly curved before basal bulb, more or less thin in apical part, and arcuately hooked ventrad at tip which is pointed; dorsal surface wide, somewhat asymmetrical, more strongly expanded to left than right, apical lobe steeply convergent distad and directed to right at the sharp tip, inner sac with three sclerites, ligulum large, subsquare, and convex, saccellus large, produced ventrad and rounded at apex; a widely thorn-shaped sclerite present under the saccellus, ostial lobe transversely quadrate, very weakly bihumped; ventral surface smooth.

Length: 15.2–15.8 mm. Width: 5.9–6.6 mm.

Holotype: ♂, Pass on the eastern shoulder of Mt. Imau Bum, alt. 3,110 m, E Kachin State, N Myanmar, 3. VI. 2002, Yasuyuki WATANABE leg. (preserved in the Natural Sciences Museum (Nat. Hist., Tokyo)). Paratype: 1♀, same data as the holotype.

Remarks: This new species is easily distinguished from all known species by the body larger in size and more elongate, more strongly constricted at boundary of pronotum and elytra, and more strongly polished. The species belongs to the group with distinct sclerites of the inner sac. *A. latecostata* TSCHITSCHÉRINE belongs to the same group.

The new species was trapped, together with *Pseudocoptolabrus watanabei* IMURA, on the steep floor of a dwarf forest composed of the larch, bamboo and *Rhododendron* etc. at the eastern shoulder of Mt. Imau Bum.

Etymology: The specific name, *watanabei*, is dedicated to Mr. Yasuyuki WATANABE who collected the examples and kindly offered them to us.

要約

伊藤　昇・井村 有希：ミャンマー産 *Aristochroa* 属の１新種の記載および *Aristochroa freyi* STRANEO の再記載．—— *Aristochroa* 属は顕著な鞘翅を持つ１群で，中国からのみ13種が知られている．筆者らは最近，渡辺康之氏によりミャンマー北部で採集された本属の標本を検する機会を得，詳細に検討を加えた結果，新種であるとの結論に達したので，本稿に *Aristochroa watanabei* として記載した．ミャンマーからは本属は初記録である．比較検討のために，地理的に近いチベットから記載された *Aristochroa freyi* STRANEO を再記載した．交尾器，特に内袋の特徴からみて，両者は明らかに別のグループに属するものと思われる．新種名の *watanabei* は，快く標本を委ねられた渡辺氏のご好意に対し，感謝の意をこめて献名したものである．

References

IMURA, Y., 2003. A new *Pseudocoptolabrus* (Coleoptera, Carabidae) discovered in the alpine region of the Kachin State of North Myanmar. *Gekkan-Mushi*, (384): 18–22.

SCIACKY, R. and D. W. WRASE, 1997. Twenty-nine new taxa of Pterostichinae from Shaanxi (Coleoptera, Carabidae). *Linzer Biologische Beiträge*, **29**: 1087–1139.

STRANEO, S. L., 1938. Nuova specie del genere *Aristochroa* TSCHIT. (Col. Carab.). *Bollttino della Società Entomologica Italiana*, **70**: 122–123.

TSCHITSCHÉRINE, T., 1898. Matériaux pour servir à l'étude des feroniens. IV. *Horae Societatis Entomologicae Rossicae*, **32** [1898-1899]: 1–224.

(Received August 10, 2005; Accepted August 23, 2005)

Ent. Rev. Japan, **60** (2): 227–234, October 31, 2005

Four New Asian Species of the Genus *Ovalisia* (Coleoptera: Buprestidae)

Sadahiro OHMOMO

Sumiyoshi 1–12–4, Arakawa-oki, Ami-machi, Inashiki-gun, Ibaraki, 300–1151 Japan

Abstract Four new buprestid species of the genus *Ovalisia* are described under the names of *O*. (*Palmar*) *pseudovirgata* and *O*. (*Palmar*) *shirozui* from Taiwan, *O*. (*Zykovisia*) *kunioi* from the south Vietnam, and *O*. (*Poecilisia*) *saitohi* from Palawan, the Philippines.

With the progress of my study on the genus *Ovalisia* after the descriptions of a new species and a new subspecies from the Philippines (AKIYAMA and OHMOMO, 1993), four new species are noticed as described in this paper as *Ovalisia* (*Palmar*) *pseudovirgata* and *shirozui* from Taiwan, *O*. (*Zykovisia*) *kunioi* from the south Vietnam, and *O*. (*Poecilisia*) *saitohi* from Palawan, the Philippines. Their subgeneric positions are followed after the system of HOLYŃSKI, 2000, who divided the genus into eight subgenera.

The abbreviations used for this study are as follows: NSMT (National Science Museum (Nat. Hist.), Tokyo, Japan) and COTJ (collection of S. OHMOMO, Tsukuba, Japan). The holotypes are deposited in the collection of NSMT. The body size is formulated as the minimum-maximum length and width. The proportional rate between maximal length (L) and maximal width (W) is expressed as the abbreviation of L/W.

Before going further, I wish to express my sincere thanks to Dr. Yoshio HIRAI, Shizuoka, Japan, for taking photographs inserted in this paper.

Ovalisia* (*Palmar*) *pseudovirgata sp. nov.

(Figs. 1, 5–1, 6–1, 7–1)

Type series. Holotype: ♂, NSMT, 1. VI. 1971, Lishan, C-Taiwan, K. KAMMIYA leg. Paratypes: 2♀♀, COTJ, 7–10. VII. 1978, Tapan, Taichung, C-Taiwan, K. and H. AKIYAMA leg.; 2♂♂, COTJ, 27. VII. 1978, Tapan, Taichung, C-Taiwan, T. SHIMOMURA leg.; 1♀, COTJ, 27. VII. 1992, Kukuan, Taichung, C-Taiwan, G. YE leg.

Description. Size 10.6–10.8×4.1–4.2 mm in male and 12.4–12.6×4.7–4.8 mm in female. Holotype: 10.8 mm in length. Body moderate, shining golden green with feeble orange tinge, antennae and legs with blue green tinge. Elytra and pronotum ornamented with several irregular indigo-blue black spots.

Head moderate; vertex with large elliptic punctures and a short and distinct median groove; frons shallowly and roundly depressed at central part, with two oblique elevations along antennal cavities and a longitudinal distinct impunctate ridge upon the central depression; surface with strong, dense and oval punctures, sparsely scattered with long yellowish grey hairs; eyes oblong-ovate, inner margins distinctly convergent to the vertex; clypeus transversely and distinctly marginate. Antennae scattered with long erect yellowish grey setae, serrate from the fourth segment; first and second segments stout, third segment cylindrical, sixth segment as wide as long, seventh to eleventh segments twice as wide as long, the first and fourth segments about twice as long as the second one, the third segment about 2.2 times longer than the second one.

Pronotum transverse, widest at basal one-third (L/W = 0.77); anterior margin gently sinuate; sides regularly and moderately arcuate on basal two-thirds, then convergent straight to anterior angles; posterior margin bisinuate, with a median lobe narrowly produced and subtruncate just before scutellum; disc with two transverse depressions along posterior margin and a rather deep small hole just before the scutellum; surface strongly and densely punctate, and ornamented with three indigo-blue impunctate spots of which longitudinal one is at median part and another oblique two are located at both sides of the median part. Scutellum 1.5 times wider than long, cordiform. Prosternal process flat and marginate, scattered with inconspicious yellowish brown hairs, strongly and densely punctate; sides dilated laterally behind forecoxae; apex obtuse.

Elytra (L/W = 1.90), widest just behind humeri; with small humeral callosities and small oblique depressions between humeral callosity and scutellum; lateral margins obliquely expanded at humeri, feebly sinuate to middle, then obliquely narrowed to apices with uniform and fine serrations in apical one-third; apices roughly dentate; basal margin strongly bisinuate; surface of each elytron with ten striae of which inner six ones are distinct and outer four are feeble, sometimes obsolete; intervals densely and strongly punctate from first to sixth intervals, confluently and rugosely punctuate thence to side margin. Abdominal surface coarsely sprinkled with round punctures, finely and rugosely punctulate between the punctures, scattered with long pale yellow setae; last abdominal sternite with two shallow depressions at each latero-basal sides, apex broadly arcuately emarginate and forming spine at both sides.

Legs short, scattered with short semi-erect yellowish white setae.

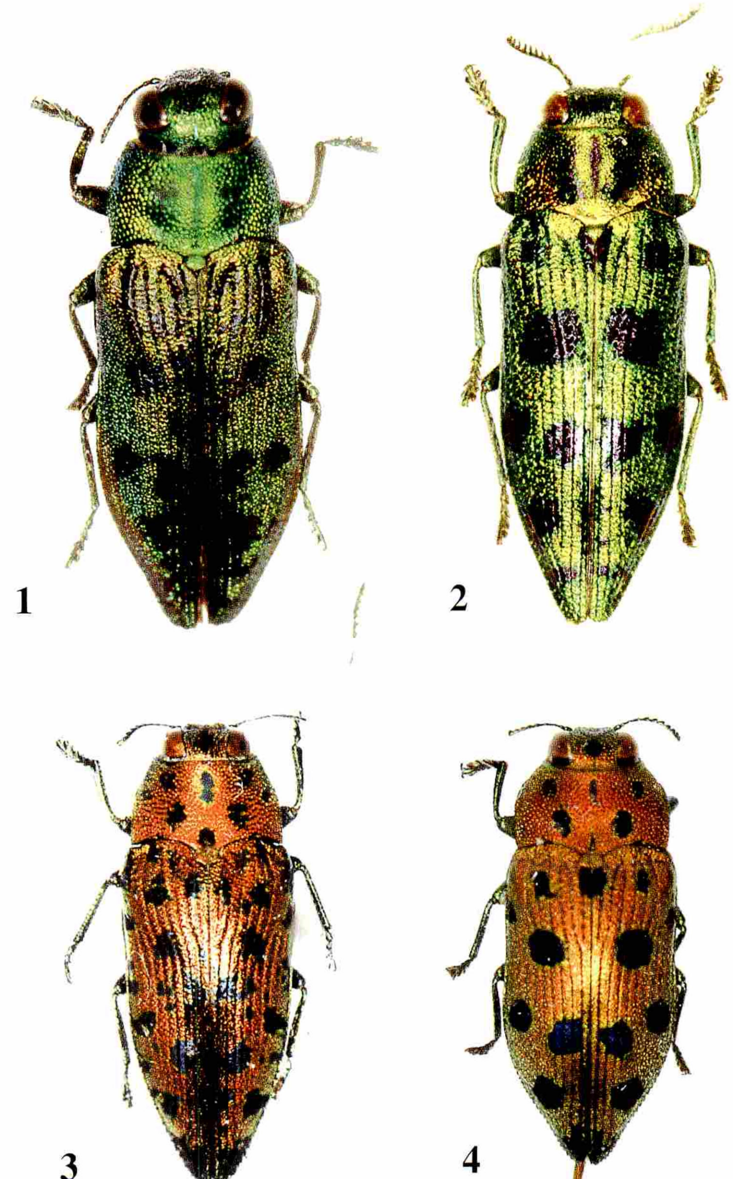
Male genitalia. As figured in fig. 7–1.

Sexual dimorphism. Female larger and rather robuster; apex of the last visible abdominal sternite rounded.

Distribution. Taiwan.

Etymology. This specific name is originated from the similarity with *Ovalisia* (*Palmar*) *virgata* (MOTSCHULSKY, 1859).

Remarks. This new species is allied to *Ovalisia* (*Palmar*) *virgata* (MOTSCHULSKY, 1859) from Amur, Far East Russia, but is easily distinguished from the latter as follows: 1) pronotum widest at basal one-third, whereas in the latter, it is at basal two-thirds; 2) scutellum cordiform, whereas in the latter, it is trapezoidal and twice wider than long; 3) elytral apices roughly dentate, whereas in the latter, they are emarginate, with a median spine; 4) prosternal process strongly and confluently punctate with sides dilated laterally behind forecoxae, whereas in the latter, it is imbricately punctate with sides subparalell between fore coxae; 5) apex of the last visible abdominal sternite in female rounded, whereas in the latter, it is arcuately emarginate; 6) male genitalia is as shown in fig. 7–1.



Figs. 1–4. *Ovalisia* spp., habitus. —— 1, *O.* (*Palmar*) *pseudovirgata* sp. nov. (holotype); 2, *O.* (*P.*) *shirozui* sp. nov. (holotype); 3, *O.* (*Zykovisia*) *kunioi* sp. nov. (holotype); 4, *O.* (*Poecilisia*) *saitohi* sp. nov. (holotype).

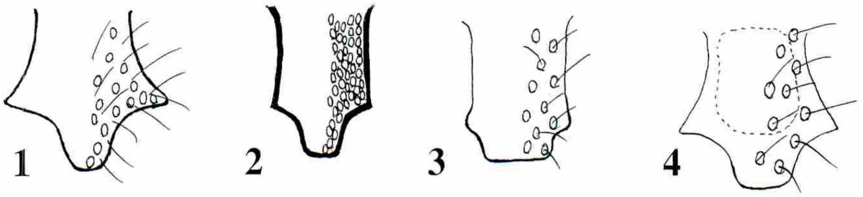


Fig. 5. Prosternal process. —— 1, *Ovalisia* (*Palmar*) *pseudovirgata* sp. nov. (holotype); 2, *O*. (*P*.) *shirozui* sp. nov. (holotype); 3, *O*. (*Zykovisia*) *kunioi* sp. nov. (holotype); 4, *O*. (*Poecilisia*) *saitohi* sp. nov. (holotype).

Ovalisia* (*Palmar*) *shirozui sp. nov.

(Figs. 2, 5–2, 6–2, 7–2)

Ovalisia sp. 3: AKIYAMA and OHMOMO, 2000: 200.

Type series. Holotype: ♂, NSMT, 10. VII. 1992, Kukuan, Taichung, C-Taiwan. Paratypes: 1♀, COTJ, 26. VI. 1965, Nanchanchi, Puli, C-Taiwan, T. SHIRÔZU leg.; 1♂, 2♀♀, COTJ, 30. VI. 1965, Nanchanchi, Puli, C-Taiwan, Y. KUROSAWA leg.; 1♂, 1♀, COTJ, VI. 1965, C-Taiwan; 2♂♂, COTJ, 27. VII. 1992, Kukuan, Taichung, C-Taiwan, G. YE leg.; 1♂, COTJ, 28. VII. 1992, Kukuan, Taichung, C-Taiwan, L. CHINCHI leg.; 1♀, COTJ, 15. VII. 1994, Kukuan, Taichung, C-Taiwan, L. CHINCHI leg.

Description. Size 8.3–9.8×3.3–3.4 mm in male and 10.8–11.2×3.8–4.4 mm in female. Holotype: 9.6 mm in length. Body rather slender, dorsally shining golden green except for antennae and legs golden blue green tinge, ventrally golden green with orange tinge. Elytra and pronotum ornamented with several irregular indigo-blue black spots.

Head moderate, vertex coarsely punctate with large elliptic punctures; frons flat, with two oblique elevations along antennal cavities; surface with strong, coarse and oval punctures, scattered with long yellowish grey hairs; eyes oblong-ovate, rather small, inner margins distinctly convergent to the vertex; clypeus transversely and moderately marginate. Antennae scattered with long erect ivory setae, serrate from the fourth segment; first and second segments stout, third segment cylindrical, tenth and eleventh segments oblong, the first, third and fourth segments about 2.5 times longer than the second one.

Pronotum widest at middle (L/W = 0.58); anterior margin slightly bisinuate, narrowly marginate with fine punctuation; sides regularly and moderately rounded; posterior margin moderately bisinuate, narrowly marginate with fine punctures, with a median lobe narrowly produced and subtruncate just before scutellum; disc with two long oval distinct depressions at both sides of longitudinal median indigo-blue black spot at basal one-third; surface strongly and densely punctate except for both lateral areas of which punctures are twice as long as that at the central area, ornamented with three indigo-blue black impunctate spots of which longitudinal one is at median part and another oblique two are at both sides of the median spot. Scutellum trapezoidal. Prosternal process flat and marginate, strongly and confluently punctate, sides subparallel between forecoxae; apex obtuse.

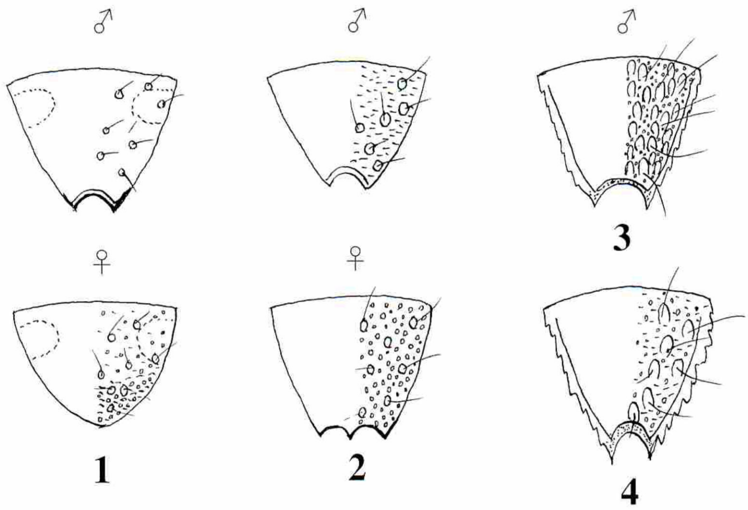


Fig. 6. Last visible abdominal sternite. —— 1, *Ovalisia* (*Palmar*) *pseudovirgata* sp. nov. (holotype); 2, *O.* (*P.*) *shirozui* sp. nov. (holotype); 3, *O.* (*Zykovisia*) *kunioi* sp. nov. (holotype); 4, *O.* (*Poecilisia*) *saitohi* sp. nov. (holotype).

Elytra (L/W = 2.13), widest just behind humeri; with a small oblique depression at both sides near scutellum and a small elevated area along suture just behind scutellum; lateral margins obliquely expanding at humeri, feebly sinuate to middle, then obliquely narrowed to apices with uniform and fine serrations in apical one-third; apices roughly dentate; basal margin moderately bisinuate; surface of each elytron with ten striae of which inner six ones are distinct and outer four are feeble, sometimes obsolate; intervals densely and confluently rugoso-punctate. Abdominal surface strongly and coarsely sprinkled with round punctures, finely and rugosely punctulate between the punctures, scattered with long pale yellow setae; apex of the last visible sternite broadly arcuately emarginate, and mucronate at both sides.

Legs short and robust, scattered with short semi-erect pale yellow setae.

Male genitalia. As figured in fig. 7–2.

Sexual dimorphism. Female rather robuster; apex of the last visible abdominal sternite arcuately emarginate, with a small median spine.

Distribution. Taiwan.

Etymology. This species name is dedicated to the late emeritus professor Takashi SHIRÔZU, who first collected materials in Taiwan as appointed to the paratype.

Remarks. This new species is allied to *Ovalisia* (*Palmar*) *vivata* (LEWIS, 1893) from Japan, but is easily distinguished from the latter as follows: 1) indigo-blue black impunctate spots on elytra and pronotum are larger than that of the latter; 2) punctures on the side of pronotum are larger and confluent, whereas in the latter, pronotum uniformly punctate; 3) depressions on pronotum are oblong-oval and distinct, whereas in the latter, they are very shallow and inconspicuous.

Ovalisia (*Zykovisia*) *kunioi* sp. nov.

(Figs. 3, 5–3, 6–3, 7–3)

Type series. Holotype: ♂, NSMT, 20. IV. 2004, Pao Loc, S-Vietnam, M. ITOH leg. Paratypes: 2♀♀, COTJ, the same data as the holotype.

Description. Size 9.9–10.0×3.8–3.9 mm in female. Holotype: 9.5 mm in length.

Body moderate, brassy or sometimes cupreous-bronzy on dorsal side, golden green on ventral side, antennae and legs shining dark blue. Elytra and pronotum ornamented with several irregular indigo-blue black spots.

Head as wide as the anterior margin of pronotum; vertex densely and largely punctate, with a distinct longitudinal median groove running to the middle of frons; frons with two distinct ridges running obliquely from inside of each eye to midline; surface strongly and densely punctate, with four impunctate indigo-blue black spaces which are finely and rugosely punctate; eyes oblong-ovate, inner margins slightly convergent to the vertex; clypeus transversely and moderately marginate. Antennae scattered with long erect ivory setae; first segment stout, second one rounded, third one cylindrical, serrate from the fourth segment, eleventh segment oblong, the first, fourth and fifth segments about 2.5 times longer than the second one, the third segment about twice as long as the second one.

Pronotum transverse, widest at base (L/W = 0.58); anterior margin slightly bisinuate; sides subparallel on basal half, then convergent straight to anterior angles; posterior margin moderately bisinuate, with median lobe broadly produced and subtruncate just before scutellum; surface with large and strong punctures of which the insides are uniformly and finely punctulate, and eight indigo-blue black impunctate spots, three spots along the anterior margin, one spot just before the median lobe and remaining 4 spots on the transverse midline. Scutellum twice wider than long, cordiform. Prosternal process strongly and coarsely punctate, scattered with long ivory setae; sides feebly dilated laterally behind forecoxae; apex obtuse.

Elytra (L/W = 1.97), widest just behind humeri; basal margin moderately bisinuate; lateral margins obliquely expanding at humeri, feebly sinuate to middle, then obliquely narrowed to apices with uniform and fine serration on apical three-fifths; apices roughly dentate; elytron with ten striae, inner five striae feebly punctate-striate at anterior one-fifth, outer five striae devoid of punctures, scattered with short inconspicuous ivory setae, intervals densely and confluently punctate except for impunctate indigo-blue black spots. Abdominal surface densely sprinkled with distinct long U-shaped punctures, finely punctulate between the U-shaped punctures, scattered with short decumbent silver white hairs; apex of the last visible sternite broadly arcuately emarginate and mucronate at both sides.

Legs short, scattered with short suberect yellowish white setae.

Male genitalia. As figured in fig. 7–3.

Sexual dimorphism. Female very similar to male, but slightly robuster.

Distribution. South Vietnam.

Etymology. This species name is dedicated to my close friend Mr. Kunio KUME, Tokyo, who offered materials for my study.

Remarks. This new species is closely allied to *Ovalisia* (*Zykovisia*) *khamvenae* (BAUDON, 1962) from Vientiane, Laos, but is distinguished from the latter as follows: 1) antennae and legs dark blue with metallic tinge, whereas in the latter, they are golden green except dark blue femora, 2) the second segment of antennae rounded, whereas in the latter, it is oblong; 3) the

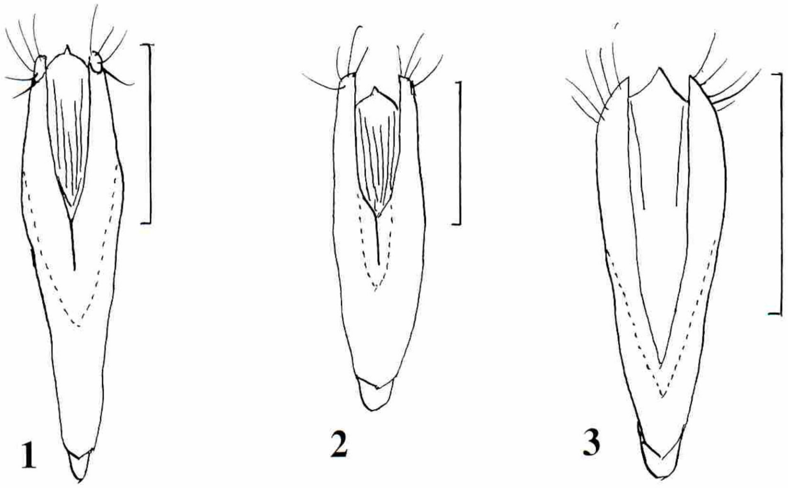


Fig. 7. Male genitalia, dorsal aspect. —— 1, *Ovalisia* (*Palmar*) *pseudovirgata* sp. nov. (holotype); 2, *O.* (*P.*) *shirozui* sp. nov. (holotype); 3, *O.* (*Zykovisia*) *kunioi* sp. nov. (holotype). Scale bars: 1.0 mm.

length of the fourth antennal segment equal with that of third one, whereas in the latter, it is 1.5 time longer than that of third one; 4) the pronotal punctures along both sides largely confluent, whereas in the latter, they are regular.

Ovalisia (***Poecilisia***) ***saitohi*** sp. nov.

(Figs. 4, 5–4, 6–4)

Type series. Holotype: ♀, NSMT, 6. V. 1989, Mt. Beaufort, C-Palawan, the Philippines, S. Saitoh leg. Paratype: 1♀, COTJ, the same data as the holotype.

Description. Size 7.8–8.2×3.4–3.5 mm. Holotype: 7.8 mm in length.

Body rather robust, brassy on dorsal side, golden green on ventral side, antennae and legs golden green. Elytra and pronotum ornamented with several irregular indigo-blue black spots.

Head as wide as the anterior margin of pronotum; vertex with a short longitudinal median groove; frons broadly depressed between two strong oblique ridges running from inside of each eye to midline; surface strongly and coarsely oval-punctate, with two impunctate indigo-blue black spots which are finely rugulose; eyes oblong-ovate, inner margins of eye slightly convergent to the vertex; clypeus transversely and moderately marginate. Antennae scattered with long erect ivory setae, serrate from fourth segment; first and second segments stout, third segment cylindrical, first and third segments about twice as long as second one, fourth and fifth segments about 2.5 times longer than second one, tenth segment equal in length to the eleventh one.

Pronotum transverse (L/W = 0.59), widest at basal two-thirds; anterior margin slightly bisinuate; sides evenly arcuate; posterior margin strongly bisinuate, with a median lobe broadly produced and subtruncate just before scutellum; disc moderately convex dorsally, with a short and deep depression just before the scutellum; surface with five indigo-blue black impunctate spots, three spots located along the anterior margin and the remaining two near posterior margin, strongly and coarsely punctate between impunctate spots. Scutellum trapezoidal. Prosternal process broadly and shallowly depressed, with large and strong elliptic punctures, scattered with long ivory hairs; sides dilated laterally behind forecoxae; apex obtuse.

Elytra (L/W = 1.83) widest just behind humeri and at basal two-thirds; lateral margins obliquely expanding at humeri, moderately bisinuate to basal two-thirds, then obliquely narrowed to apices with uniform and fine serration on apical three-fifths; apices finely dentate; basal margin strongly bisinuate; surface of each elytron with nine striae which are moderately punctate on anterior one-third, with intervals densely and confluently rugoso-punctate. Abdominal surface densely sprinkled with distinct long U-shaped punctures, finely rugoso-punctulate between the U-shaped punctures, scattered with short decumbent silver whitish hairs; apex of the last visible sternite broadly and arcuately emarginate and mucronate at both sides.

Legs short, scattered with short semi-erect yellowish white setae.

Sexual dimorphism. Male unknown.

Distribution. The Philippines: Palawan Is.

Etymology. This species name is dedicated to Mr. Shusei SAITOH, Tokyo, who offered materials for my study.

Remarks. This new species is closely allied to *Ovalisia* (*Poecilisia*) *perakensis* (FISHER, 1933) from Malay Peninsula, Malaysia, but is distinguished from the latter as follows; 1) vertex with a short median groove, whereas in the latter, it is long and running to middle of the frons; 2) the length of the first antennal segment equal with that of third one, whereas in the latter, it is about 1.5 times longer than that of third one; 3) the length of the tenth antennal segment is longer than that of eleventh one, whereas in the latter, it is shorter.

要　　約

大桃定洋：クロホシタマムシ属のアジア産4新種．―― クロホシタマムシ属の4新種 *Ovalisia* (*Palmar*) *pseudovirgata* sp. nov. と *Ovalisia* (*Palmar*) *shirozui* sp. nov. を台湾から，*Ovalisia* (*Zykovisia*) *kunioi* sp. nov. を南ベトナムから，*Ovalisia* (*Poecilisia*) *saitohi* sp. nov. をパラワン島からそれぞれ記載した．

References

AKIYAMA, K. and S. OHMOMO, 1993. A new species and one new subspecies of the genus *Ovalisia* KERREMANS, 1900, from the Philippines (Coleoptera, Buprestidae). *The Entomological Review of Japan*, **48**: 11–14.

AKIYAMA, K. and S. OHMOMO, 2000. The buprestid beetles of the world. Mushi-Sha's Iconographic Series of Insect 4. *Ed*., H. FUJITA, Mushi-Sha, Tokyo, pl. 71 (No. 874), p. 200.

BAUDON, A., 1962. Contribution à l'etude des buprestidae du Laos. *Bulletin de la Société Royale des Sciences Naturelles du Laos*, **4**: 70–97.

FISHER, W.S., 1933. New Malayan buprestidae, II. *Journal of the Federated Malay States Museums*, **17**: 361–374.

HOLYŃSKI, R. B., 2000. Taxonomic structure of *Ovalisia* KERR. s. l. (Coleoptera, Buprestidae). *Jewel Beetles*, (8): 1–18.

(Received August 25, 2005; Accepted September 11, 2005)

Ent. Rev. Japan, **60** (2): 235–242, October 31, 2005

Buprestid Beetles (Coleoptera: Buprestidae), New to Japanese Fauna (Part 3)

Sadahiro OHMOMO

Sumiyoshi 1–12–4, Arakawa-oki, Ami-machi, Inashiki-gun, Ibaraki, 300–1151 Japan

Abstract Two new buprestid species of the genus *Agrilus* are described under the names of *makiharai* sp. nov. from Amami-Oshima, Ryukyus and *melanolucidus* sp. nov. from Honshu. One new subspecies of the genus *Agrilus* is also described under the name of *komareki emisi* subsp. nov., from Hokkaido. One of the subspecies, *melanopterus* SOLSKY, 1875 from Tsushima island, Kyushu was synonymized under the nominotypical species, *Agrilus cyaneoniger* SAUNDERS, 1873.

In this paper, I will describe two new species of the genus *Agrilus* CURTIS, 1825 as a result of my continuous study on the Japanese buprestid beetles (OHMOMO, 2002, 2004).

The holotypes are deposited in the collection of NSMT. The abbreviations used for this study are as follows: NSMT (National Science Museum (Nat. Hist.), Tokyo), COTJ (collection of S. OHMOMO, Tsukuba, Japan) and NIFF (National Institute of the Forestry and Forestry Products, Tsukuba, Japan). The body size is expressed as the minimum-maximum length and minimum-maximum width. The proportional ratios between maximal body length (L), maximal elytral length (EL), maximal body width (W) and maximal elytral width (EW) are expressed as the abbreviation of L/W and EL/EW, respectively.

Before going further, I wish to express my sincere thanks to Dr. Yoshio HIRAI, Shizuoka, Japan, for taking photographs inserted in this paper.

Agrilus makiharai sp. nov.

(Figs. 1, 3–1, 4–1, 6)

Type series. Holotype: ♀, NSMT, 2–15. VII. 2004, Mt. Yuidake, Amami-Oshima, Kagoshima Pref., Ryukyus, H. MAKIHARA leg., (Malaise trap). Paratypes: 2♀♀, COTJ, the same data as the holotype; 1♀, NIFF, the same data as the holotype.

Description. Size 6.8–6.9×1.8 mm. Holotype: 6.8 mm in length. Body slender, head, pronotum and tibiae blackish purple, elytra golden orange with purplish tinge on posterior half, ventral surface, antennae and legs except tibiae dark golden green with metallic tinge.

Head rather small; vertex moderately and longitudinally wrinkled, with an obsolete median groove running to the center of frons; frons flattened, rugoso-punctate with fine and imbricate punctures, scattered with pale-yellow long hairs; eyes oblong-ovate, distinctly marginate; inner margins of eye slightly convergent downwards; clypeus moderately incurved, with a distinct depression at the central part, twice wider than distance between antennal cavities; antennae slender, serrate from 4th segment, with 1st and 2nd segments subglobular and large, about 1.8 times as long as 3rd, 4th segment about twice as long as 3rd.

Pronotum slightly transverse (L/W = 0.95), widest at anterior one-fourth; sides arcuately sinuate; anterior margin bisinuate, with a distinct broad median lobe; posterior margin distinctly trisinuate; anterior and posterior angles sharply projecting forward and backward, respectively; disk moderately convex, densely punctate with wrinkles which are concentrically formed around the median lobe, rugoso-punctate at basal third with small circular punctures, with a shallow depression at just before the scutellum and longitudinal white hair patch along each lateral side at anterior one-third; marginal carina slightly arcuate; submarginal carina joined proximally and distant from marginal one in basal one-third, then elongate; prehumeral carina distinctly rounded at proximal three-fifths and aproaching but not joined with the marginal carina (Fig. 3–1). Anterior prosternal lobe strongly bisinuate and marginate, divided by a transverse and deep groove from prosternum; prosternal process weakly dilated laterally behind forecoxae (Fig. 4–1), widely marginate, with a shallow depression at the center and with large punctures sparsely, densely covered with short ivory hairs.

Elytra transversely rugoso-imbricate (L/W = 3.16), wider than pronotum at the base, widest in the middle, with a distinct but shallow depression densely covered with white hairs (just like a white hairy patch) at each humerus and a longitudinal shallow depression along the suture, with a distinct humeral callosity; sides subparallel from the base to anterior two-fifths, then feebly enlarged and rectilinearly narrowed to apex; apices separately subacute, distinctly denticulate-serrate. Scutellum trapezoidal, with a distinctly elevated transverse carina in postmedial area and a posterior-median spinous projection. Both sides of the visible abdominal first sternite from surface aspect with a white hair patch. Last abdominal sternite emarginate at the apex. The metatibiae widened at the anterior one-fifth, narrowed at the apex (Fig. 6).

Distribution. Japan: the Ryukyus (Amami-Oshima).

Host plant. Unknown.

Etymology. This species name is dedicated to Dr. Hiroshi MAKIHARA, NIFF, Tsukuba, who is a first collector of this new species.

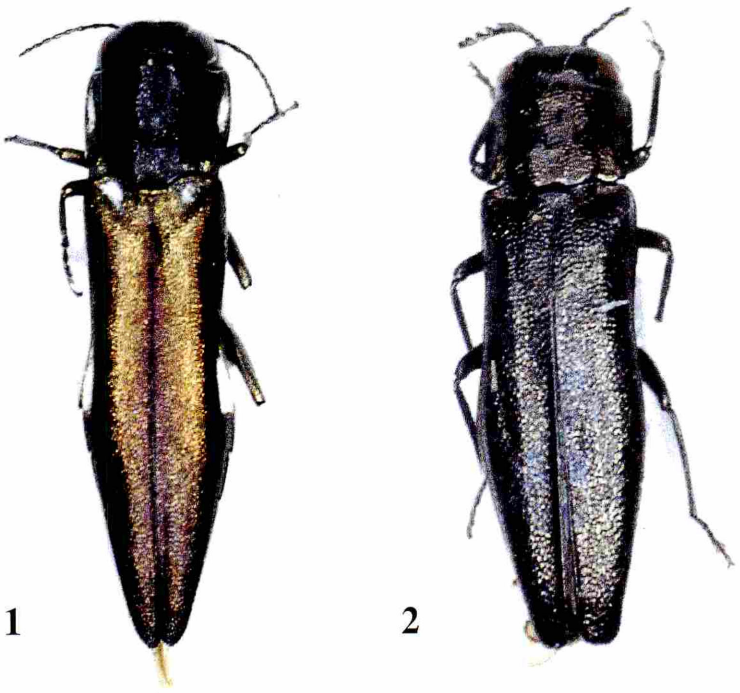
Remarks. This new species is similar to *Agrilus esakii* Y. KUROSAWA, 1964, but is easily distinguished from the latter by the characters as follows: 1) latero-anterior sides of pronotum, basal part of each elytron and first visible abdominal sternite from surface aspect with dense white hairy patches; 2) prehumeral carina not joined with the humeral carina; 3) metatibiae swollen at the anterior one-fifth (Fig. 6), whereas in the latter, it is regularly straight; 4) length of antennal segments 5th > 6th > 7th, whereas in the latter, it is 5th < 6th = 7th.

Agrilus melanolucidus sp. nov.

(Figs. 2, 3–2, 4–2, 5)

Type series. Holotype: ♂, NSMT, 6. VII. 1985, Nobeyama-kogen, Nagano Pref., S. OHMOMO leg. Paratypes: 2♂♂, 1♀, COTJ, the same data as the holotype; 1♀, COTJ, 7. VII. 1995, Shimauchi, Matsumoto-shi, Nagano Pref., T. KOSAKA leg.; 1♂, COTJ, 19. VI. 2004, Mt. Hakaseyama, Showa-mura, Minami-aizu, Fukushima Pref., S. OHMOMO leg.

Description. Size 4.8–6.0×1.4–1.8 mm. Holotype: 4.8 mm in length. Body small, shining black with feeble purplish tinge, frons shining black with feeble golden orange tinge in male;



Figs. 1–2. *Agrilus* spp., habitus. —— 1, *A. makiharai* sp. nov. (holotype); 2, *A. melanolucidus* sp. nov. (holotype).

ventral surface shining black, scattered with ivory short hairs; antennae shining black with greenish tinge.

Head moderate; vertex rather densely and longitudinally rugoso-punctate, with an obsolete median groove running to the center of frons; frons shallowly depressed, transversely wrinkled with finely imbricate-punctures, scattered with pale yellow short hairs; eyes oblong-ovate, inner margins of eye subparallel, distinctly marginate; clypeus moderately incurved, 2.5 times wider than the length between antennal cavities; antennae slender, 1st and 2nd segments subglobular and large, serrate from 4th segment, 4th = 5th > 1st = 2nd > 3rd.

Pronotum slightly transverse (L/W = 0.90), widest near the anterior margin; sides feebly widening forward; anterior margin slightly bisinuate, with median lobe broadly produced; posterior margin strongly trisinuate; anterior angles sharply projecting forward; posterior angles obtuse and rounded; disk moderately convex, with two shallow oblong depressions along the sides from the middle to anterior margin, two longitudinal shallow depressions along the insides of the prehumeral carina and one large shallow depression along posterior margin just before scutellum; surface densely and transversely wrinkled with finely and imbricate-punctate; marginal and submarginal carinae joined proximally; prehumeral carina distinctly rounded at proximal two-fifths, disappeared at the middle, then joined to marginal carina (Fig. 3–2). Anterior prosternal lobe strongly bisinuate, divided by a transverse and deep groove from the prosternum; prosternal process lingulate (Fig. 4–2), with a shallow depression at the center, scattered with short pale yellow hairs.

Elytra distinctly wider than pronotum at base, widest at the anterior three-fifths (L/W = 2.87); sides subparallel from base to anterior one-tenth, then slightly convergent to anterior one-third, successively swollen near anterior three-fifths, and obliquely convergent to the tips, which are separately truncate and finely denticulate-serrate; anterior margin distinctly elevated; sutural margin moderately elevated in posterior three-fifths; disk with a shallow depression along sutural margin from anterior one-seventh to posterior one-seventh and a distinct depression along anterior margin, and with a short longitudinal callosity on each humerus; surface densely and finely imbricate-punctate, scattered with inconspicuous short pale yellow hairs. Scutellum trapezoidal, with a distinctly elevated transverse carina in postmedial area, median projection posteriorly spiny. Last abdominal sternite rounded at apex.

Legs short and robust; femora curved inward; tibiae weakly curved outward, with the outer ridge flattened.

Male genitalia. As figured in fig. 5.

Sexual dimorphism. Female similar to male, but slightly robuster.

Distribution. Japan: Honshu (Central and East regions).

Host plant. Unknown.

Etymology. This species is named after its body coloration.

Remarks. This new species is allied to *Agrilus nicolanus* OBENBERGER, 1924, but can be distinguished from the latter by the characters as follows: 1) body larger than the latter; 2) dorsal surface shining black with feeble purplish tinge except for frons shining black with feeble golden orange tinge in male, whereas in the latter, it is golden green with yellowish tinge sometimes shining olive; 3) antennae with 11th segment shorter than 3rd one, whereas in the latter, it is about 1.2 times longer than 3rd one; 4) prosternal process lingulate, whereas in the latter, it is square with a small apical projection; 5) prehumeral carinae distinctly circular at proximal one-third, not join to marginal carina.

In addition, specimens from Nobeyama-kogen were collected by sweeping the leaves of *Salix* sp.

Agrilus komareki emisi subsp. nov.

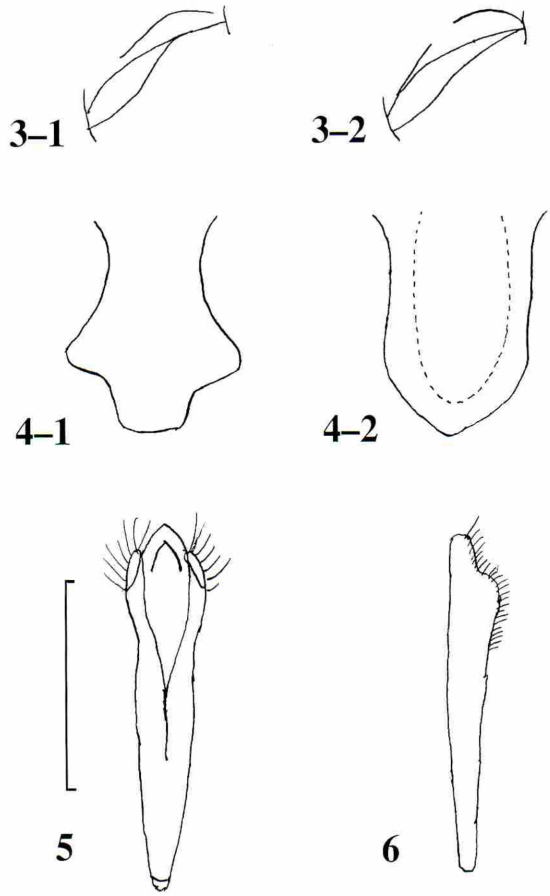
Type series. Holotype: ♂, NSMT, 5. VII. 1986, Higashikawa-cho, Kamikawa-gun, Hokkaido, S. ARAKI leg. Paratypes: 1♀, COTJ, 14. VII. 1981, Takuhoku, Kita-ku, Sapporo, Hokkaido, T. TAKANO leg.; 6♂♂, 2♀♀, COTJ, the same data as the holotype; 6♂♂, 1♀, COTJ, 13–15. VII. 2005, Engaru-cho, Monbetsu-gun, Hokkaido, S. OHMOMO leg.

Description. Size 5.0–6.6×1.4–1.6 mm. Holotype: 5.0 mm in length. Distinguished from the nominotypical subspecies from Honshu by the following points: 1) Male body bright-bronzy, sometimes cupreous and female body bright cupreous, whereas in the latter, male body blackish bronzy, sometimes dark chocolate brown and female body dark chocolate brown; 2) prehumeral carinae indistinct, sometimes absent at the middle, whereas in the latter, it is obsoletely but entirely expanding at the middle.

Male genitalia. Almost the same as those of nominotypical subspecies.

Sexual dimorphism. Female similar to male except for the body shape which is rather robuster. Frons golden green in male, whereas cupreous in female.

Distribution. Japan: Hokkaido.



Figs. 3–6. Carina on prothrax (lateral aspect) (3), prosternal process (4), male genitalia (dorsal aspect) (5) and metatibiae (6). —— *Agrilus makiharai* sp. nov. (holotype) (3–1, 4–1, 6); *A. melanolucidus* sp. nov. (holotype) (3–2, 4–2, 5).

Host plant. Unknown.

Etymology. This subspecies name is taken from an old name of the type locality, Hokkaido.

Agrilus cyaneoniger SAUNDERS, 1873

Agrilus cyaneoniger SAUNDERS, 1873: 515.
Agrilus melanopterus SOLSKY, 1875: 277-279.
Agrilus cyaneoniger var. *cupreoviridis* LEWIS, 1893: 332.
Agrilus mikado OBENBERGER, 1924: 35-36.
Agrilus cyaneoniger melanopterus SOLSKY: KUROSAWA, 1974: 1. —— ALEXEEV, 1989: 479. —— AKIYAMA et OHMOMO, 1997: 31–32. —— JENDEK, 2000: 188; 2003: 181.

Materials examined. **Russia**: 1♂, 1♀, COTJ, VI. 1991, USSR, Primorsk, Kraj, Arsenev, 44.11N, 133.19E, O. SAUSA leg. **Korea**: 1♂, COTJ, 25. VII. 1979, Pagesa, Tegu, Korea, H. TAKIZAWA leg. **Japan**: [Hokkaido] 1♀, COTJ, 30. VII. 1975, Ichinohashi, Shimokawa-cho, Nayoro-shi, Hokkaido, S. OHMOMO leg.; 1♀, COTJ, 31. VII. 1975, Putokamabetsu-rindo, Shumarinai, Hokkaido, S. OHMOMO leg.; 1♂, COTJ, 18. VII. 1976, Takinoue, Monbetsu-shi, Hokkaido, T. TAKANO leg.; 1♀, COTJ, 5. VIII. 1980, Kitamoshiri, Shumarinai, Hokkaido, S. YADA leg.; 4♀♀, COTJ, 21. VII. 1984, Ibun, Shibetsu-cho, Hokkaido, T. OKUYAMA leg.; [Honshu] 1♂, 1♀, COTJ, 1. VIII. 1984, Akane-rindo, Haramachi-shi, Fukushima Pref., H. SAKAGUCHI leg.; 1♀, COTJ, 15. VII. 1978, Eda, Iwaki-shi, Fukushima Pref., S. OHMOMO leg.; 1♀, COTJ, 17. VII. 1981, Shitokigawa-rindo, Iwaki-shi, Fukushima Pref., S. OHMOMO leg.; 1♀, COTJ, 14. VII. 1974, Mt. Osho, Hanazono-sanchi, Kitaibaraki-shi, Ibaraki Pref., S. ZENBA leg.; 1♀, COTJ, 7. VII. 1979, Sadanami, Hanazono-sanchi, Kitaibaraki-shi, Ibaraki Pref., S. OHMOMO leg.; 1♀, COTJ, 13. VI. 1981, Ogitsuyama Park, Hitachi-shi, Ibaraki Pref., H. SAKAGUCHI leg.; 1♀, COTJ, 8. VI. 1978, Omonnma, Toride-shi, Ibaraki Pref., S. OHMOMO leg.; 1♀, COTJ, 31. V. 1964, Nippara, Okutama, Tokyo-to, Y. KUROSA leg.; 1♂, COTJ, 21. VI. 1964, Mt. Takao, Hachiouji-shi, Tokyo-to, S. OHMOMO leg.; 2♀♀, COTJ, 12. VI. 1966, Mt. Ogura, Tsukui-gun, Kanagawa Pref., K. MATSUKI leg.; 1♀, 23. VIII. 1989, Nirasaki-shi, Yamanashi Pref., S. NAKAMURA leg.; 1♀, 23. VI. 1968, Daibosatsu Pass, Enzan-shi, Yamanashi Pref., S. OHMOMO leg.; 1♂, 10. VII. 1982, Nikkawa-rindo, Enzan-shi, Yamanashi Pref., M. SAWAI leg.; 2♀♀, 4. VI. 1983, Nikkawa-rindo, Enzan-shi, Yamanashi Pref., M. SAWAI leg.; 2♀♀, Todai, Ina, Nagano Pref., T. KOBAYASHI leg.; [Shikoku] 2♂♂, 1♀, COTJ, 28. VII. 1979, Mt. Tsurugi, Tokushima Pref., S. OGATA leg.; [Kyushu] 1♀, COTJ, 30. V. 1970, Mt. Inunaki, Kurate-gun, Fukuoka Pref., S. OGATA leg.; 1♂, COTJ, 11. VII. 1976, Mt. Inunaki, Kurate-gun, Fukuoka Pref., N. TAKEI leg.; 2♀♀, COTJ, 17. VI. 1984, Mt. Inunaki, Kurate-gun, Fukuoka Pref., S. OGATA leg.; 3♀♀, COTJ, 20. VII. 1980, Mt. Kurodake, Kokonoe-cho, Oita Pref., N. TAKEI leg.; [Yakushima Is.] 3♂♂, 3♀♀, COTJ, 15. VII. 1970, Kusugawa-rindo, Kagoshima Pref., T. KOBAYASHI leg.; 1♂, COTJ, 20. VII. 1974, Shiratani-rindo, Kagoshima Pref., K. IKEDA leg.; 1♀, COTJ, 14. VII. 1978, Ohkawa-rindo, Kagoshima Pref., Y. ODA leg.; [Tsushima Is.] 1♂♂, 2♀♀, COTJ, 2. VI. 1975, Tsutsu, Izuhara-cho, Nagasaki Pref., J. OGUMA leg.; 1♀, COTJ, 23. V. 1979, Nakahara, Izuhara-cho, Nagasaki Pref., Y. TAKENAKA leg.; 8♂♂, 4♀♀, COTJ, 29. IV. 1989, Ohkubo, Mita-tsushima, Nagasaki Pref., T. AKASHI leg.

Distribution. Russian Far East, China, Korea, India, Japan: Hokkaido, Honshu, Shikoku, Kyushu, Yakushima Is., Tsushima Is.

Remarks. The variation of *Agrilus cyaneoniger* SAUNDERS, 1873 in the east Asian region including Japan, Korea, China and Russia are well known as suggested by KUROSAWA (1974), JENDEK (1995, 2000) and AKIYAMA et OHMOMO (1997). One of subspecies, *melanopterus* SOLSKY, 1875 from Ussuri, Russia, was treated as a synonym of nominotypical subspecies by ALEXEEV (1989). However, the subspecies *melanopterus* SOLSKY, 1875 from Tsushima Is., Nagasaki Prefecture, Japan as well as specimens from Korea and Russia was recognized as an valid subspecies by AKIYAMA et OHMOMO (1997). This treatment was followed in the revision of the *Agrilus cyaneoniger* species group by JENDEK (1995). In this revision, subspecies *melanopterus* SOLSKY, 1875 and nominotypical subspecies were distinguished by the difference of body coloration. Namely, head, pronotum and elytra are black in the nominotypical subspecies, while head and pronotum are gold, golden green, golden orange or bronze and elytra are black with bluish or greenish tinge in subspecies *melanopterus* SOLSKY, 1875. The form having head and pronotum which are gold, golden green or bronze and elytra which are black with greenish tinge corresponds to the variety *cupreovirides* LEWIS, 1892 (type locality: Hokkaido, Japan). The form having head and pronotum which are golden orange and elytra which are black with bluish or greenish tinge corresponds to the variety *mikado* OBENBERGER, 1924 (type locality: Hokkaido, Japan). Further, the difference of body shape among subspecies

Table 1. Appearance frequency of three forms in *Agrilus cyaneoniger* SAUNDERS, 1873

Form	Regions				
	Hokkaido	Honshu	Tsushima Is.	Kyushu	Yakushima Is.
mikado OBENBERGER, 1924 (including *melanopterus* SOLSKY, 1875)	88%	6%	75%	0%	0%
cupreovirides LEWIS, 1892	12%	63%	25%	14%	33%
nomino-typical subspecies	0%	31%	0%	86%	67%

melanopterus SOLSKY, 1875 and nominotypical subspecies (type locality: Honshu or Kyushu) was suggested by KUROSAWA (1974).

Distributional regions of these subspecies were mapped by JENDEK (2000) as follows: subspecies *melanopterus* SOLSKY, 1875 including variety *cupreovirides* LEWIS, 1892 and variety *mikado* OBENBERGER, 1924 (Russian Far East, north China, Mongolia, Japan: Tsushima Is. and east Honshu) and nominotypical subspecies (south China, India, Vietnam, Japan: west Honshu and Kyushu). AKIYAMA and OHMOMO (1997) also showed the distributional regions as follows: subspecies *melanopterus* SOLSKY, 1875 (Russian Far East, China, Korea, India, Japan: Tsushima Is.) and nominotypical subspecies (Japan: Hokkaido, Honshu, Shikoku, Kyushu, Yakushima Is., and Oki Is.).

From these mentioned above, the relationship between nominotypical subspecies and subspecies *melanopterus* SOLSKY, 1875 including variety *cupreovirides* LEWIS, 1892 and variety *mikado* OBENBERGER, 1924 might be revalidated. Therefore, many specimens were examined in detail as mentioned in the term of materials examined. The appearance frequency of three forms, *mikado* OBENBERGER, 1924 including subspecies *melanopterus* SOLSKY, 1875, *cupreovirides* LEWIS, 1892 and nominotypical subspecies, is summarized in Table 1. Another phenotypes of material from the regions were as follows: [Hokkaido region] average EL (AEL) 10.6 mm, average EW (AEW) 3.3 mm, AEL/AEW 3.21; [Honshu region] AEL 9.9 mm, AEW 2.9 mm, AEL/AEW 3.21; [Kyushu region] AEL 13.0 mm, AEW 3.6 mm, AEL/AEW 3.61; [Tsushima Is. region] AEL 10.1 mm, AEW 3.0 mm, AEL/AEW 3.36; [Yakushima Is. region] AEL 12.6 mm, AEW 3.5 mm, AEL/AEW 3.60. The variation of body shape among various regions was slight and the regional form was hardly recognized while the average body size (EL and EW) of Kyushu region was relatively large. Regional difference of body coloration is very variable as shown in Table 1. For example, nominotypical subspecies, variety *cupreovirides* LEWIS, 1892 and variety *mikado* OBENBERGER, 1924 were detected in the same lot specimens in several locations of Honshu region. On the other hand, the nominotypical subspecies and variety *mikado* OBENBERGER, 1924 were very high in Kyushu, Yakushima Is., Hokkaido and Tsushima Is., respectively. Namely, variety *mikado* mainly appeared among specimens from Hokkaido region and Tsushima Is. region and nominotypical subspecies mainly appeared among specimens from Kyushu region and Yakushima Is. region. Specimens from Honshu region contained all types.

From these results of phenotypical characteristics, subspecies *melanopterus* including variety *cupreovirides* and variety *mikado* was hardly distinguished from the nominotypical subspecies, and should be a junior synonym of *Agrilus cyaneoniger* SAUNDERS, 1873. Of course, the shape of male genitalia were very hard to distinguish the all types.

要　約

大桃定洋：日本産タマムシ科甲虫の新種（第3報）．――― 日本産タマムシ科甲虫として，ナガタマムシ属の2新種マキハラナガタマムシ *Agrilus makiharai* sp. nov. と，ヒメクロツヤナガタマムシ *Agrilus melanolucidus* sp. nov. を記載した．また，北海道産のクワナガタマムシを新亜種と認め，*Agrilus komareki emishi* subsp. nov.として記載した．さらに，中国大陸産と同じ亜種とされてきたクロナガタマムシ *Agrilus cyaneoniger* SAUNDERS, 1873 の対馬産は本州に現れる個体群の一型と認め，本州産原亜種の形態変異の中に含まれると判断して，与えられていた亜種名 *melanopterus* SOLSKY, 1879 を無効とした．

References

AKIYAMA, K. and S. OHMOMO, 1997. A check list of the Japanese Buprestidae. *Gekkan-Mushi* (supplement 1), 67 pp., Tokyo.

ALEXEEV, A.V., 1989. Buprestidae. *In* Key of insects of the Far East of the USSR, Coleoptera, t. 3, part 1, pp. 463–489, Leningrad. (In Russian.)

JENDEK, E., 1995. Studies in the East Palaearctic species of the genus *Agrilus* (Coleoptera: Buprestidae) Part II. *Entomological Problems,* **26**: 137–150.

JENDEK, E., 2000. Revision of the *Agrilus cyaneoniger* species group. *Entomological Problems*, **31**: 187–193.

KUROSAWA, Y., 1964. Description of several new species and subspecies of the genus *Agrilus* CURTIS from Amami-Oshima of the Loo-Choo Archipelago. *Kontyu, Tokyo*, **32**: 323–334.

KUROSAWA, Y., 1974. Review of the Japanese species of the family Buprestidae (11). *Kochu News*, (21/22): 1–2. (In Japanese.)

LEWIS, G., 1893. On the Buprestidae of Japan. *Journal of Linnaeus Society, Zoology, London*, **24**: 327–338.

OBENBERGER, J., 1924. Symbolae ad specierum regionis palaearcticae buprestidarum congnitionem. *Jubilejni Sbornik Ceskoslovenské Spolecnosti entomologické*, pp. 6–59.

OHMOMO, S., 2002. Buprestid beetles (Coleoptera: Buprestidae) new to Japanese fauna (part 1). *The Entomological Review of Japan*, **57**: 155–164.

OHMOMO, S., 2004. Buprestid beetles (Coleoptera: Buprestidae) new to Japanese fauna (part 2). *The Entomological Review of Japan*, **59**: 135–143.

SAUNDERS, E., 1873. Descriptions of Buprestidae collected in Japan by George LEWIS. *Journal of Proceedings of the Linnean Society of London, Zoology*, **11**: 509–523.

SOLSKY, S., 1875. Matériax pour l'entomographie des provinces asiatiques de la Russie. *Trudy Russkago Entomologicheskogo obshchestva*, **11**: 253–299.

(Received August 25, 2005; Accepted September 11, 2005)

Ent. Rev. Japan, **60** (2): 243–245, October 31, 2005

A New *Haroldius* (Coleoptera: Scarabaeidae) from Taiwan

Kimio MASUMOTO
Institute of Human Living Sciences, Otsuma Women's University,
Tokyo, 102–8357 Japan,

Chi-Feng LEE
Institute of Zoology, Academia Sinica, Taipei, 11529 Taiwan

and

Teruo OCHI
21–6, Kôfûdai 5-chôme, Toyono-chô, Toyono-gun, Osaka, 563–0104 Japan

Abstract A new *Haroldius* species collected from northern Taiwan is described under the name of *Haroldius hwangi* sp. nov.

The Fushan Botanical Garden located in the northern part of Taiwan is one of very interesting areas, where the nature of old Taiwan has been conserved, and a rich fauna of wild animals including insects has been known to occur. Several specialists have carried on researches about dung beetles and found new species. They also recorded several new distributions from Taiwan.

Through the second author (C.-F. L.), the first author (K. M.) was asked to determine the dung beetles from the Fushan Botanical Garden, collected by Wenbe HWANG in the Institut Zoologie, Albert-Ludwigs-Universität, Freiburg.

He carefully examined all of the materials, and found an interesting species among them. It is a member of the genus *Haroldius*. Actually, one species, *H. perroti* PAULIAN, 1939, has been recorded by PAULIAN and SCHEUERN (1994, p. 440) from the southern part of Taiwan. However, the species from the Fushan Botanical Garden possesses a quite different feature from it. The first author asked to join the second and third authors (T. O.) for the detailed study concerning this unknown species. Finally the authors concluded that the species was new to science, and that it was a second species of *Haroldius* from Taiwan.

Before going further in details, they would like to express their cordial acknowledgement to Mr. Wenbe HWANG, Institut Zoologie, Albert-Ludwigs-Universität, Freiburg, for offering invaluable specimens for the present study, and also to Dr. Makoto KIUCHI, Tsukuba City, for taking photographs inserted in this paper. The holotype will be deposited in the collection of the Taiwan Forestry Research Institute, Taipei, Taiwan.

Haroldius hwangi sp. nov.

(Figs. 1–3)

Brownish black, head, lateral parts of pronotum, ventral surface and legs lighter in colour, dorsal surface and legs moderately, rather vitreously shining, ventral surface somewhat alutaceous; each surface glabrous except for the basal 2/5 of elytra, which are sparsely provided with erect scales, whose apical parts are hooked. Body very broadly oval, strongly convex dorsad but noticeably depressed in medial part.

Head rather flat and transverse, covered with isodiametric microsculpture, rather sparsely punctulate; clypeal margin feebly reflexed, sharply bidentate at the middle; genae weakly produced laterad, subrectangular; frons feebly convex in middle. Eyes slender in dorsal view, a little depressed and obliquely curved.

Pronotum rather wide, gently narrowed anteriad; apex produced in middle, feebly bisinuous in lateral parts; base strongly and roundly produced in medial part, feebly depressed, with oblique notches; front angles rounded, hind angles nearly rectangular in dorsal view; sides steeply inclined, with flattened spaces becoming wider anteriad; disc rather strongly, subrhombically raised, weakly covered with isodiametric microsculpture, more closely punctulate than on head.

Elytra almost rounded, with basal parts noticeably emarginated opposite to pronotal base; dorsum strongly convex, noticeably sulacte in basal parts, with an impression at base of the 3rd stria, respectively; disc weakly strigose, with seven striae; intervals wide, very weakly convex, with a row of punctures and scales on 1st to 4th and 6th intervals, with two rows of those on 5th and 7th in basal parts.

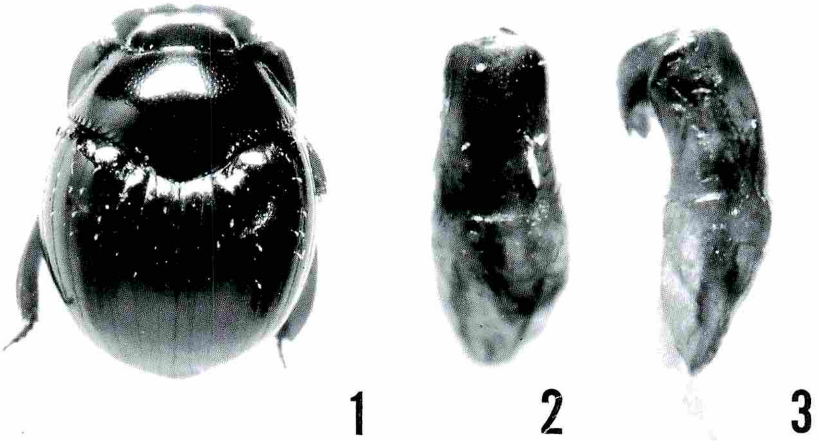
Pygidium gently convex, rather sparsely punctulate in middle, strigose in lateral parts; mesosternum subtrapezoidal, strigose, with straight basal margin and curved posterior margin; metasternum very wide, punctulate in middle, strigose in lateral portions.

Protibiae widened apicad, subtruncate at apex, with two outer teeth and an apical one: anterior outer tooth larger the posterior one, apical one smallest and located at the corner of truncation; mesotibiae short, weakly indented at apex, with outer margin rather strongly produced; metatibiae rather strongly widened apicad, indented at apex, with interior margin weakly produced in basal 2/5, exterior margin roundly produced postero-laterad.

Body length: 2.6–2.7 mm.

Holotype: ♂, Fushan Botanical Garden, N. Taiwan, VIII–IX. 2001, W.-B. HWANG leg. Paratypes: 4 exs., same data as for the holotype.

Notes. This new species resembles *Haroldius fleutiauxi* PAULIAN, 1945, originally described from Tonkin, but can be distinguished from the latter by the body more strongly constricted at the borders of the pronotum and elytra, the base of the former more strongly produced posteriad, thus bases of the latter more strongly emarginate, the scales on the elytra finer and covered in anterior 2/5 (bolder and covered almost whole the elytra in *H. fleutiauxi*). This specific name is given in honor of Mr. Wenbe HWANG, Institut Zoologie, Albert-Ludwigs-Universität, Freiburg.



Figs. 1–3, *Haroldius hwangi* sp. nov. —— 1, Habitus, male, holotype; 2, male genitalia (dorsal view); 3, ditto, (lateral view).

要　約

益本 仁雄・李 奇峰・越智 輝雄：*Haroldius* 属の1新種. —— これまで台湾の *Haroldius* 属の種としては，ベトナム・トンキンから記載された *Haroldius perroti* PAULIAN, 1945 が高雄県藤枝から記録されている (PAULIAN and SCHEUERN, 1993, p. 440). このたび台湾北部の福山植物園にて W.-B. HWANG 氏が採集した本属の種が新種であったので，*Haroldius hwangi* sp. nov. と命名した.

References

PAULIAN, R., 1945. Coléoptères Scarabéides de l'Indochine. *Faune de l'Empire Français*, **3**: 267 pp., 1 map, Larose, Paris.

PAULIAN, R. and J. SCHEUERN, 1993. *Haroldius* BOUCOMONT nouveaux ou peu connus de la région Orientale (Coléoptères Scarabaeidae). *Revue Suisse de Zoologie*, **101**: 435–440.

(Received August 31, 2005; Accepted September 11, 2005)

Ent. Rev. Japan, **60** (2): 247–254, October 31, 2005

New Tenebrionid Beetles from Taiwan (1)

Kimio MASUMOTO
Institute of Human Living Sciences, Otsuma Women's University,
Tokyo, 102–8357 Japan,

Katsumi AKITA
Iba-chô 66, D–304, Hisai City, Mie Pref., 514–1108 Japan

and

Chi-Feng LEE
Institute of Zoology, Academia Sinica, Taipei, 11529 Taiwan

Abstract Three new tenebrionid species are described from Taiwan under the names *Amarygmus bremeri* sp. nov., *Promethis piluensis* sp. nov. and *Crypaeus chengi* sp. nov. Besides, two new synonyms are proposed, *Byrsax kawadai* MASUMOTO, 1982, syn. nov. = *B. shibatai* MASUMOTO, 1982, and *Cryphaeus incurvatus* MASUMOTO, 1982, syn. nov. = *C. satoi* KASZAB, 1964.

The beetles of the family Tenebrionidae are highly diversified in various areas on the earth, and some species are specially modified in body shape. They occur under bark, in dead wood, fungi, or dry vegetable matter. Taiwan is not so wide in area, but its topography and climate are much intricate. Because of such intricate nature, more than 250 species belonging to about 80 genera have hitherto been known from this island.

Recently, the first author (K. M.) started in reviewing old records and was in need of examining new materials which had been collected in these 20 years. He therefore asked the second author (K. A.) to join this project. He also invited a Taiwanese specialist (C.-F. L.) to this project, who has been strongly interested in the Taiwanese species. This is the first part of the result of the project.

Before going further into details, they would like to express their cordial acknowledgement to Dr. Kwong-Ching HUANG for his assistance in collecting the new species of *Cryphaeus* in the Taroko National Park, Emer. Prof. Dr. Hans J. BREMER, Melle, Germany, Dr. Ottó MERKL, the Hungarian Natural Science Museum, Dr. Wolfgang SCHAWALLER, Staatliches Museum für Naturkunde, Stuttgart, for giving invaluable suggestion. They also thank to Dr. Makoto KIUCHI, Tsukuba City, for taking clear photographs inserted in this paper. Finally, they wish to express their deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the manuscript of this paper.

The abbreviations used herein are as follows: NMNS = National Museum of Natural Science, Taichung; NSMT: National Science Museum (Nat. Hist.), Tokyo.

Description of New Species

Amarygmus bremeri sp. nov.

(Figs. 1–8)

Piceous, head, pronotum and elytra with dark coppery tinge; head and scutellum weakly, sericeously shining, pronotum and elytra metallically shining, lateral parts of elytra with a weakly sericeous reflexion under a certain light, ventral surface somewhat alutaceous; almost glabrous. Body oblong-ovate, strongly convex above.

Head weakly covered with isodiametric microsculpture, rather closely punctulate; clypeus transverse, feebly produced in apical part, bent downwards in antero-lateral parts, weakly depressed in basal part, fronto-clypeal border widely U-shaped and finely sulcate; genae weakly raised and produced antero-laterad; frons steeply inclined anteriad, very feebly, broadly convex; diatone nearly of the same width of transverse diameter of an eye. Eyes large, convex laterad, obtusely inlaid into head. Antennae feebly subclavate, reaching basal 1/6 of elytra, ratio of the length of each segment from base to apex: 0.31, 0.22, 0.58, 0.33, 0.35, 0.36, 0.35, 0.37, 0.36, 0.35, 0.53.

Pronotum somewhat trapezoidal, 1.8 times as wide as long; apex feebly emarginate in dorsal view and finely bordered; base gently rounded, produced in area opposite to scutellum, sinuous on each side, not bordered; sides rather steeply declined to lateral margins, which are rounded and finely bordered; front angles subrectangular, hind angles obtusely angulate; disc gently convex, very slightly covered with isodiametric microsculpture, moderately, rather closely and irregularly punctulate, the punctures larger than those on head, with impunctate or sparsely punctate areas along median line and in lateral parts. Scutellum triangular, slightly convex, weakly covered with isodiametric microsculpture, sparsely punctulate, the punctures smaller than those on pronotum.

Elytra 1.4 times as long as wide, nearly 3.0 times the length and 1.2 times the width of pronotum, widest at basal 1/3; dorsum strongly convex, highest at basal 2/9; disc with rows of rather small punctures, which are somewhat elongate, often connected with one another by fine striae; intervals almost flat, weakly covered with isodiametric microsculpture, moderately punctulate, the punctures obviously smaller than those on head; sides steeply declined to lateral margins, which are grooved and finely rimmed; humeri weakly swollen; apices simply rounded.

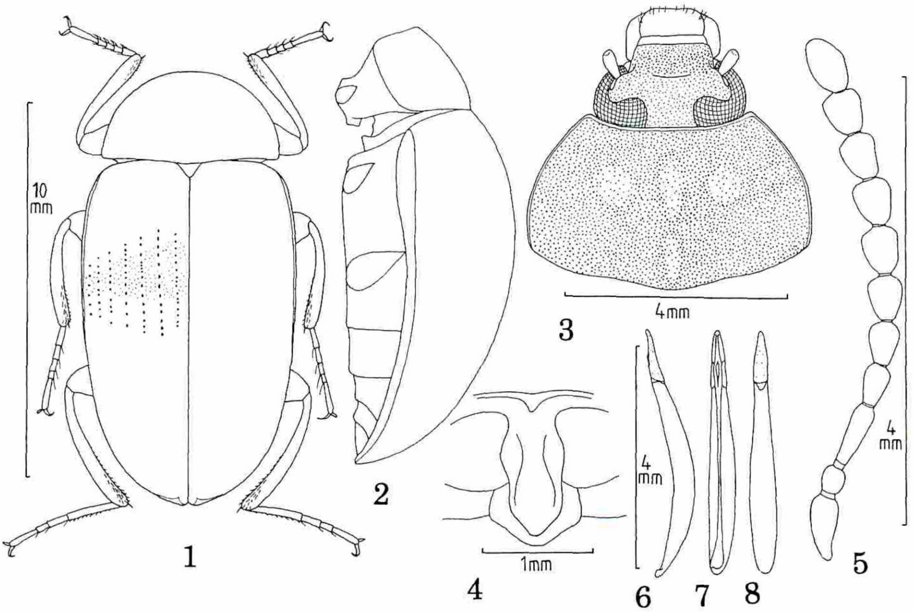
Male anal sternite not modified, but with lateral margins feebly, roundly produced near base. Legs medium-sized for the members of this genus; male protibiae nearly straight; male meso- and metatibiae gently curved interiad; ratios of the lengths of pro-, meso- and metatarsal segments: 0.37, 0.33, 0.35, 0.23, 0.72; 0.61, 0.38, 0.34, 0.24, 0.79; 1.41, 0.50, 0.38, 0.77.

Male genitalia slender, 4.2 mm in length, 0.4 mm in width, gently curved ventrad; fused lateral lobes 0.8 mm in length, strongly elongated triangular in dorsal view, curved dorsad, with apices hooked in lateral view.

Body length: 10.5–11.5 mm.

Holotype: ♂, Taiwan: Taipei, Si Shou Shan (Hu Shan), 24. VII. 2004, C.-F. LEE leg. (NMNS). Paratypes: 1 ex., Shang Shan, Taipei City, 16. V. 1990, H.-T. CHENG leg.; 1 ex., “Shang Shan (2) 11. VII. 2004 / N., H.-T. CHENG leg., 586”.

Notes. Each lateral margin of the elytra possesses a small hump at apical 2/5 in the holotype, but there is no hump in the two paratypes.



Figs. 1–8. *Amarygmus bremeri* sp. nov. —— 1, Habitus; 2, lateral view; 3, head and pronotum; 4, prosternal apophysis; 5, antennae; 6, male genitalia (lateral view); 7, ditto (ventral view); 8, ditto (dorsal view).

The specific name is given after Emeritus Prof. Dr. Hans J. BREMER, who kindly suggested specific independency and offered the illustrations of this species.

Promethis piluensis sp. nov.

(Figs. 9–13)

Blackish brown, dorsal surface, antennae except for 1st, 2nd and 11th segments, legs except for claws and apical portions of tibiae black, hairs of legs and mouth-parts yellowish brown. Head, pronotum, and lateral portions of elytra dully shining, disc of elytra and ventral surface alutaceous. Body rather elongate, subparallel-sided, gently convex dorsad.

Male. Head subdecagonal, gently raised posteriad, rather closely and finely punctate, the punctures becoming smaller and sparser posteriad; clypeus transversely subhexagonal, feebly convex in middle, closely punctulate in apical part, fronto-clypeal border widely U-shaped and finely sulcate; genae flabellate, weakly raised in lateral parts, depressed in anterior parts of eyes; areas along eyes rimmed and impunctate; diatone about 1.6 times the width of transverse diameter of an eye. Eyes medium-sized, transverse, weakly produced laterad. Antennae rather short, reaching basal 1/3 of pronotum, subclavate, weakly flattened, 8th to 10th segments subquadrate, 11th somewhat pear-shaped, ratio of the length of each segment from base to apex: 0.64, 0.22, 0.56, 0.44, 0.40, 0.36, 0.40, 0.38, 0.36, 0.38, 0.46.

Pronotum subquadrate, 1.4 times as wide as long, widest at basal 3/7; apex feebly, widely emarginate, very slightly produced in medial 1/3, weakly depressed on each side, rimmed, the rims finely punctulate; base weakly produced in medial 3/5, gently sinuous in lateral parts, clearly bordered and rimmed, the rim punctulate and tapering laterad; lateral margins feebly produced, noticeably bordered and boldly rimmed, the rims punctulate and impressed at basal 1/4; front angles rounded, hind angles subrectangular; disc gently convex, rather sparsely, irregularly and finely punctate, the punctures almost of the same size as those on vertex, with a pair of vague depressions near apex, and also with a pair of indistinct oblique impressions near base. Scutellum linguiform, very feebly longitudinally depressed, rather sparsely scattered with punctures, which are of the same size as those on pronotum.

Elytra 1.7 times as long as wide, 3.1 times the length and 1.4 times the width of pronotum, widest at apical 3/8; disc moderately convex, feebly flattened in basal 1/3, highest at apical 1/3, punctato-striate, the striae fine, the punctures in striae set 2.0 to 3.5 times their own diameter apart and notching intervals; intervals feebly convex, finely micro-aciculate, rather sparsely scattered with small punctures; sides rather steeply declined to deeply bordered lateral margins, which are finely rimmed, horizontally impressed at basal 1/3; humeri feebly swollen; apices weakly produced.

Mentum obtrapezoidal, glabrous, rather closely punctate, raised in mushroom-shape in middle; gula triangular, microshagreened, transversely and finely aciculate; terminal segment of maxillary palpus medium-sized, with curved outer side about 1.8 times the length of inner, 1.5 times the length of apical.

Legs medium-sized, protibia rather strongly curved intro-ventrad in apical 1/4, with tufted apex; mesotibia nearly straight, with inner margin curved at apical 1/8, with tufted apex; metatibia weakly becoming bolder apicad, with outer margin nearly straight, inner margin deeply incised at apical 1/8, and apex sparsely tufted; ratios of the lengths of pro-, meso- and metatarsal segments: 0.43, 0.18, 0.15, 0.21, 1.15; 0.53, 0.25, 0.25, 0.20,1.31; 0.88, 0.31, 0.31, 1.44.

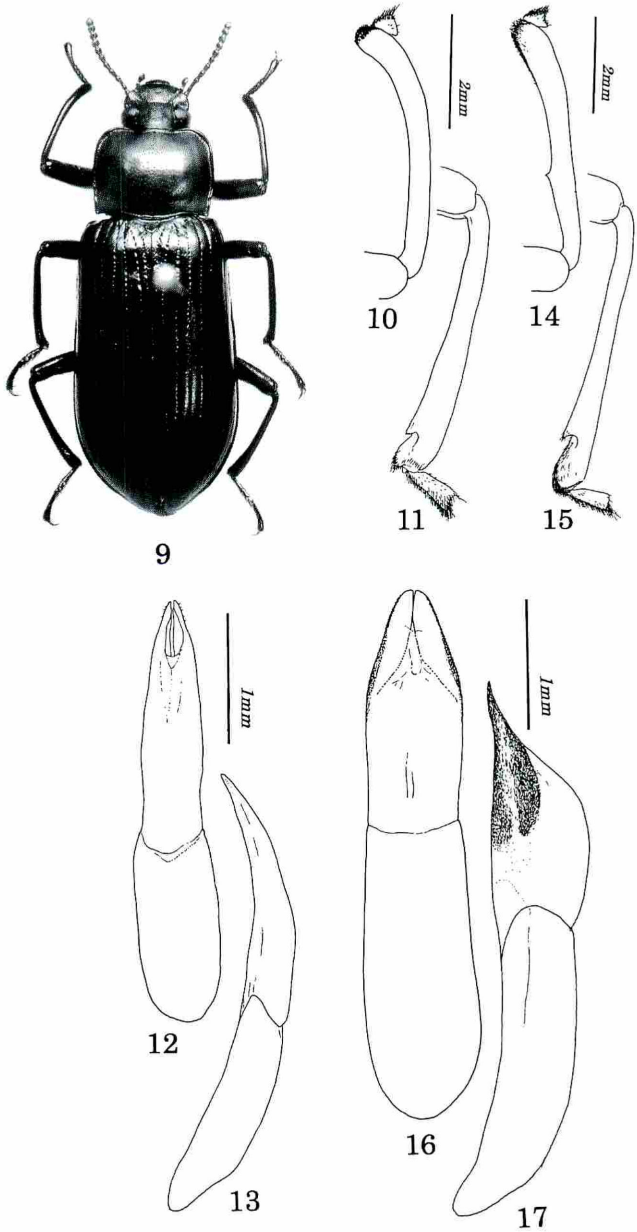
Male genitalia 3.4 mm in length, 0.6 mm in width, weakly curved in lateral view; basal piece oblong-ovate in dorsal view, fused lateral lobes subfusiform, about 1.2 times the length of basal piece, with apical parts obviously not fused with each other.

Female. Metatibiae without special modification.

Body length: 19.6 mm.

Holotype: ♂, Pilu, Taiwan, 8. V. 1991, J. LUO leg. (NSMT). Paratypes: 1♀, Sungkang, Nantou Hsien, C. Taiwan, 11. VI. 1974, H. YOKOYAMA leg. (ex-paratype of *P. kurosawai*); 1♀, "MASUMOTO collection, Taiwan" (no further detailed data, ex-paratype of *P. kurosawai*).

Notes. This new species closely resembles *Promethis kurosawai* (MASUMOTO, 1982b) from Taiwan, but can be easily distinguished from the latter by the pronotum widest at a little behind middle (at apical 1/3 in *Pk* = *P. kurosawai*), the dorsal surface gently shining (almost mat in *Pk*), the elytra striated (very faintly so in *Pk*) and punctures of the intervals larger, the mentum glabrous (densely haired in *Pk*), the male protibia without tooth (with a laminate tooth at basal 2/5 of inner margin in *Pk*) and haired in only apex (in apical 2/5 in *Pk*), the inner margin of male metatibia with a deep incision at apical 1/8 (at apical 2/7 in *Pk*), and the male genitalia different in shape.



Figs. 9–17. *Promethis piluensis* sp. nov. (9–13) and *P. kurosawai* MASUMOTO (14–17). —— 9, Habitus, male, holotype; 10, 14, male protibia; 11, 15, male metatibia; 12, 16, male genitalia (dorsal view); 13, 17, ditto (lateral view).

Cryphaeus chengi sp. nov.

(Figs. 18–21)

Piceous, three basal segments of antennae, mouth parts and tarsi blackish brown, scutellum and elytra with a very weak brownish tinge; head weakly shining, pronotum and scutellum feebly sericeous and scarcely shining, elytra matt, ventral surface almost alutaceous; each surface glabrous. Body elongate, subparallel-sided, moderately convex longitudinally.

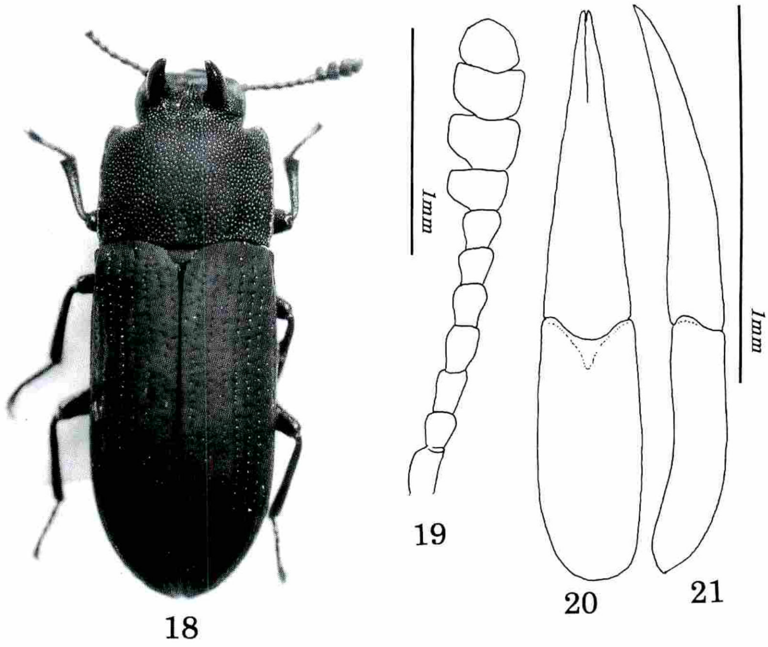
Head transversely subelliptical, weakly covered with isodiametric microsculpture, closely punctate, the punctures shallow, those in medial part rather large and haired at each centre; clypeus transversely convex, widely in middle, bent ventrad in front, feebly bisinuous at apex, front-clypeal border transversely depressed; genae roundly produced antero-laterad, depressed along anterior margins of eyes, clypeo-genal borders and front-genal borders; frons weakly declined to front-clypeal border, gently, longitudinally concave; vertex roundly concave, the concavity connected with the frontal concavity, with a pair of subconical horns (incurved in frontal view), interocular space about 2.3 times the width of an eye diameter. Eyes medium-sized, oblique, subovate in dorsal view, divided into dorsal and ventral parts by extension of genae. Antennae medium-sized, subclavate, extending beyond the middle of pronotum, four apical segments obviously flattened and widened, ratio of the length of each segment from base to apex: 0.27, 0.13, 0.20, 0.19, 0.17, 0.16, 0.18, 0.0.23, 0.26, 0.27, 0.24.

Pronotum wider than long (4 : 3), widest at basal 1/3; apex weakly emarginate, almost straight in middle, sinuous in lateral parts, not bordered; base moderately bisinuous, not bordered; sides gently declined to lateral margins, which are grooved, punctate and irregularly crenulate; front angles gently roundly produced anteriad, hind angles acutely angulate; disc gently convex, covered with isodiametric microsculpture, rather closely punctate, each puncture with a hair at the centre, obliquely impressed close to base on each side. Scutellum widely triangular with rounded sides, feebly convex, weakly covered with isodiametric microsculpture, rather closely punctulate.

Elytra 1.87 times as long as wide, 2.7 times the length and 1.1 times the width of pronotum, widest at basal 3/7, feebly narrowed anteriad and posteriad, roundly narrowed in apical 1/3; dorsum strongly convex longitudinally; disc covered with isodiametric microsculpture, very weakly, somewhat transversely wrinkled, with rows of small punctures, which are sparsely set and become larger and sparser in lateral parts; intervals very slightly convex, sparsely scattered with punctures, which are similar to or slightly smaller than those in rows; sides steeply declined to lateral margins, which are invisible from above; humeri feebly swollen; apices feebly roundly produced.

Mentum subcordate, longitudinally grooved, ridged in a V-shape; gula short, subtriangular, micro-reticulate, impressed along lateral borders; terminal segment of each maxillary palpus elongated securiform, with curved exterior side 1.5 times the length of interior, twice the length of apex.

Prosternum coarsely, closely punctate, rather strongly raised in intercoxal space, with prosternal process weakly depressed in posterior part; mesosternum short, closely, rugoso-punctate, moderately raised in a V-shape in posterior part along mesocoxal cavities; metasternum rather wide, feebly covered with isodiametric microsculpture, punctate, the punctures in antero-lateral parts larger, those in intero-posterior part finer and somewhat obliquely arranged, with the median groove from anterior 1/4 to posterior border. Abdomen punctulate and minutely



Figs. 18–21. *Cryphaeus chengi* sp. nov. —— 18, Habitus, male, holotype; 19, antenna; 20, male genitalia (dorsal view); 21, ditto (lateral view).

haired; anal sternite closely punctulate and haired, weakly depressed near base on each side and also transversely impressed at the middle.

Legs without any modification; ratios of the lengths of pro-, meso- and metatarsal segments: 0.11, 0.09, 0.09, 0.09, 0.36; 0.19, 0.08, 0.09, 0.09, 0.56; 0.28, 0.13, 0.12, 0.58.

Male genitalia subfusiform, 1.5 mm in length, basal piece very feebly curved in lateral view; lateral lobes 0.8 mm in length, elongated triangular, weakly curved in lateral view, with weakly prolonged acute apices.

Body length: 8.1 mm.

Holotype: ♂, Taiwan: Hualien, Taroko National Park, 6. IX. 2001, C.-F. LEE leg. (NMNS).

Notes. This new species resembles *Crypaeus satoi* KASZAB, 1964, in general feature, but can be easily distinguished from it by the wider body, with the antennae with four apical segments obviously widened and flattened and the male genitalia longer (about 1.1 mm in length and 0.24 mm in width in *C. satoi*.

The specific name is given after Mr. Hsing-Tzung CHENG, Taipei, who is an amateur entomologist working on the insect fauna of Si Shou Shan (Four animal mountains), including Shang Shan (Elephant mountain), Hu Shan (Tiger mountain), Shih Shan (Lion mountain), and Bao Shan (Leopard mountain). He has contributed to the clarification of the beetle fauna of those areas.

New Synonymy

Byrsax shibatai MASUMOTO, 1982

Byrsax shibatai MASUMOTO, 1982, Elytra, Tokyo, **10**: 26. (Nanshanchi, Nantou Hsien).
Byrsax kawadai MASUMOTO, 1982, Elytra, Tokyo, **10**: 28. (Nanshanchi, Nantou Hsien). [**Syn. nov.**]

Cryphaeus satoi KASZAB, 1964

Cryphaeus satoi KASZAB, 1964, Ent. Rev. Japan, Osaka, **17**: 1. (Insel Tokara, Nakanoshima).
Cryphaeus incurvatus MASUMOTO, 1982, Elytra, Tokyo, **10**: 63. (Kenting Park, Pingtung Hsien). [**Syn. nov.**]

要約

益本 仁雄・秋田 勝己・李 奇峰：台湾産ゴミムシダマシ科の新種について（１）．―― 台湾産のゴミムシダマシ科の再検討を開始した．今回はマルキマワリ属の新種 *Amarygmus bremeri* sp. nov.，ユミアシゴミムシダマシ属の新種 *Promethis piluensis* sp. nov.，及びヒメツノゴミムシダマシ属の新種 *Crypaeus chengi* sp. nov.を記載した．あわせて，２種のシノニムを提案した．すなわち，*Byrsax kawadai* MASUMOTO, 1982, syn. nov. = *B. shibatai* MASUMOTO, 1982, 及び *Cryphaeus incurvatus* MASUMOTO, 1982, syn. nov. = *C. satoi* KASZAB, 1964 である．

References

KASZAB, Z., 1964. Über die Tenebrioniden einiger japanischen Inseln (II) (Coleoptera). *The Entomological Review of Japan, Osaka*, **17**: 1–10.
MASUMOTO, K., 1982 a. Tenenbrionidae of Formosa (4). *Elytra, Tokyo*, **10**: 17–32.
MASUMOTO, K., 1982 b. Tenenbrionidae of Formosa (5). *Elytra, Tokyo*, **10**: 53–72.

(Received September 11, 2005; Accepted September 21, 2005)

原稿作成の要領

1. 原稿はプリントアウトしたもの２部（１部はコピー可）と，CD，MO，フロッピーディスクに保存したMS-Word形式またはテキスト形式のデータを提出する．用紙はＡ４判を用い，左右に3 cmの余白をあけ，行間はダブルスペースとする．表題，見出し，人名など，いかなる場合も大文字だけでは入力しない．また和文要約および♂♀記号を除いて日本語フォントを用いてはならない．
2. 原稿には表紙をつけ，これに表題，ランニング・タイトル（簡略化した論文表題，欧文50字以内），代表著者名，連絡先（住所，電話番号，E-mail）を明記し，原稿及び図表の枚数，別刷りの必要部数（50部単位），その他連絡事項などを記入する．
3. 本文は，表題，著者名，所属機関とその所在地または住所，E-mail（任意），刷り上がり10行程度まで（約150語）の英文要約（Abstract），本文，和文要約，参考文献，表，図の説明，図の順に配列する．
4. 動植物の属以下の学名，参考文献中の雑誌名などはイタリック体で，人名のうち姓のイニシャル以外はスモールキャピタル体で，雑誌の巻などはボールド体で表記する．それが不可能の場合はローマン体で表記し，イタリック体は下線，スモールキャピタル体は二重下線，ボールド体は波下線で示す．
5. 参考文献は著者名のアルファベット順に並べ，雑誌名は略さずフルタイトルで表記する．

   Blackwelder, R. E., 1936. Morphology of the coleopterous family Staphylinidae. Smithsonian miscellaneous Collections, **94** (13): 1–102

   — , 1952. The generic names of the beetle family Staphylinidae with an essay on genotypy. Bulletin of United States National Museum, **200**: i-iv+1–483.

   Müler, J., 1925. Terzo contributo alla conoscenza del genere Staphylinus L. Bollettino Societa entomologica Italiana, **57**: 40–48.
6. 標本のデータは以下のように表記する．

   （例）3♂♂, 2♀♀, Amaishi, Hyôgo, 28. V. 1995, Y. Hayashi leg.
7. 図（線画）は耐水性黒色インクで鮮明に描き，そのまま印刷出来るようにする．写真はプリントした鮮明なものを台紙に貼り付ける．図の拡大（縮小）率を示したい場合は図中にスケールを入れる．原図には薄紙のカバーをかけ，これに著者名，図の番号，上の方向を示す．もし図中に文字を入れる場合には，カバーの指定位置に赤字で示す．原図の大きさは，台紙を含めてＡ４判（210 mm × 295 mm）以内とする．また原図の返送が必要な場合は，カバーにその旨を記入する．
8. 図をデータ入稿する場合はAdobe Photoshop，Adobe Illustrator，EPS，TIFF，PICT，JPEGなどの各形式にて，写真は350 dpiのグレーまたはカラーモードで，線画は800～1800 dpiのモノクロ２階調モードで作成する．それぞれ刷り上がり希望サイズに調整して作成するが，最終的な縮尺は編集部に一任されたい．図をデータ入稿する場合も，かならずプリントアウトを添付すること．

編集委員からのお願い

最近の投稿原稿には投稿規定を大きく逸脱したものが見受けられます．投稿される原稿については，投稿規定ならびに原稿作成の要領をよく参照したうえで作成してください．いちじるしく不備のある原稿は受け付けません．また，原稿はできる限り英文校閲をお受けになられたうえでお送り下さい．英文のスペルチェック等も著者自身で必ず行っておいて下さい．

参考文献については，59巻より雑誌名を略記せずにフルタイトルで記入するスタイルに変更しております．編集部でチェックできないものもあるので，よくご確認のうえ投稿してください．

人名はイニシャルのみ大文字に，残りは全て小文字で打ち込んで下さい（例：Yasuhiko Hayashi）．編集部でスモールキャピタル化する際，全て大文字で入力されているとスモールキャピタル化できません．中国，韓国，タイなど，日本と同じ順序による姓名表記の場合も，欧米式の姓名表記とします（つまり名，姓の順）．

著者負担について

16ページを超える超過ページの印刷経費，カラー写真の印刷経費は著者負担となります．別刷は全て表紙付きとして，表紙代のみ学会負担とし，他の経費は著者負担とします．

和文要約について

短報を除く原著論文には和文要約を付けて下さい．学術用語で打ち出せない漢字もありますが，できるだけ努力します．

著作権

1. 昆虫学評論および“ねじればね”に掲載された論文の著作権は原則として日本甲虫学会（以下，本学会）に属する．
2. 著者自身が自分の著作の一部を複製・翻訳などの形で利用する場合，これに対して本学会では原則的に意義申し立てしたり妨げることはしない．ただし，著者自身でも全文を複製の形で他の著作物に利用する場合に限り，事前に本学会へ文書で申し出を行い，許諾を求めなければならない．
3. 第三者から論文の複製あるいは転載に関する許諾の要請があり，本学会において必要と認めた場合は，著者に代わって許諾することがある．

昆虫学評論　投稿規定

1. 昆虫学評論に投稿する原稿は，日本およびその近隣地域における甲虫（コウチュウ）目に関する新規の知見を含み，未発表のものに限る．
2. 投稿は原則として本学会会員に限る．原稿は１名以上のレフェリーにより審査され，その意見に基づき編集委員が採択の可否を決定する．編集委員は著者に質問や意見の回答や原稿の修正を求める場合がある．掲載は原則的に採択順となるが，全額実費負担の場合は優先的に取り扱うことが可能である．
3. 使用言語は原則として英語とし，短報を除く原著論文については和文要約をつけることとする．原稿の長さは刷り上がり16ページ以内とし，超過ページの印刷経費は著者負担とする．
4. 原稿（本文，図，表および表紙）は別記の要領で作成し，プリントアウト２部（１部はコピー可）と本文のテキストデータを保存したCD，MO，またはフロッピーディスクを編集委員に書留で郵送する．その他の詳しい原稿作成の要領については別ページを参照のこと．
5. 新規の分類学的処理に関しては，最新の国際動物命名規約を遵守したものでなければならない．
6. 原稿の掲載上の体裁については編集委員に一任されたい．
7. 著者校正は原則として初校のみとする．校正での大幅な変更や追加は認めない．
8. 別刷は50部単位で作成し，費用は全額著者負担とする．
9. 原稿の送付，問い合わせ先は下記とする．

ねじればね　投稿規定

1. “ねじればね”誌には和文原稿を掲載する．分類学的な解説やノート，分布や生態などの短報，同定の手引き，その他役に立つ情報など幅広い内容の原稿を随時受けつける．なお，新しい分類学的処理を含む内容の論文は“ねじればね”誌には掲載できない．
2. 原稿の作成は昆虫学評論に準じる．

昆虫学評論
吉川鮎美　〒534–0023　大阪市都島区都島南通 1–17–1（株）大榮商会　Tel (代表) 06–6922–1346
芦田　久　〒567–0045　茨木市紫明園 7–4–201　Tel 072–623–8774
林　靖彦　〒666–0116　川西市水明台 3–1–73　Tel 072–793–3712　Fax 0771–86–0863（編集事務局）
ねじればね
水野弘造　〒611–0002　宇治市木幡熊小路 19–35　Tel & Fax 0774–32–4929　E-mail: kzmizuno@oak.ocn.ne.jp
保科英人　〒910–8507　福井市文京 3–9–1　福井大学教育地域科学部地域環境講座　Tel 0776–27–8692
初宿成彦　〒546–0034　大阪市東住吉区長居公園 1–23　大阪市立自然史博物館 昆虫研究室
Tel 06–6697–6221　Fax 06–6697–6225　E-mail: shiyake@mus-nh.city.osaka.jp
学会本部・担当：初宿成彦（上記）

昆虫学評論　The Entomological Review of Japan
第60巻2号　Vol. 60, No. 2
平成17年10月31日発行
Published on October 31, 2005
会費納入振替口座：00990–8–39672

発行者　佐々治寛之
発行所　日本甲虫学会
〒546–0034　大阪市東住吉区長居公園1–23
大阪市立自然史博物館・昆虫研究室気付
印刷所　株式会社 NPCコーポレーション
〒530–0043　大阪市北区天満1–9–19

The Entomological Review of Japan Vol. 60, No. 2

CONTENTS

JAŁOSZYŃSKI, P. and H. HOSHINA: Revision of Palearctic Species of *Veraphis* CASEY (Coleoptera: Scydmaenidae). ······ 101

PUTHZ, V.: Notes on Chinese *Dianous* LEACH (Coleoptera: Staphylinidae). ······ 137

YOSHITOMI, H. and M. SATÔ: Scirtidae of the Oriental Region, Part 8. New Species and Additional Record of the Genus *Hydrocyphon* (Coleoptera: Scirtidae). ······ 153

HARUSAWA, K.: Descriptions of Two New Species of the Genus *Apterocatops* MIYAMA (Coleoptera: Leiodidae: Cholevinae) from the Kii Peninsula, Central Japan. ······ 207

ITO, N. and Y. IMURA: A New Species of the Genus *Aristochroa* from Myanmar with Redescription of *A. freyi* (Coleoptera: Carabidae: Pterostichini). ······ 219

OHMOMO, S.: Four New Asian Species of the Genus *Ovalisia* (Coleoptera: Buprestidae). ······ 227

OHMOMO, S.: Buprestid Beetles (Coleoptera: Buprestidae), New to Japanese Fauna (Part 3). ······ 235

MASUMOTO, K., C.-F. LEE and T. OCHI: A New *Haroldius* (Coleoptera: Scarabaeidae) from Taiwan. ··· 243

MASUMOTO, K., K. AKITA and C.-F. LEE: New Tenebrionid Beetles from Taiwan (1). ······ 247

原稿作成の要領 ······ 255